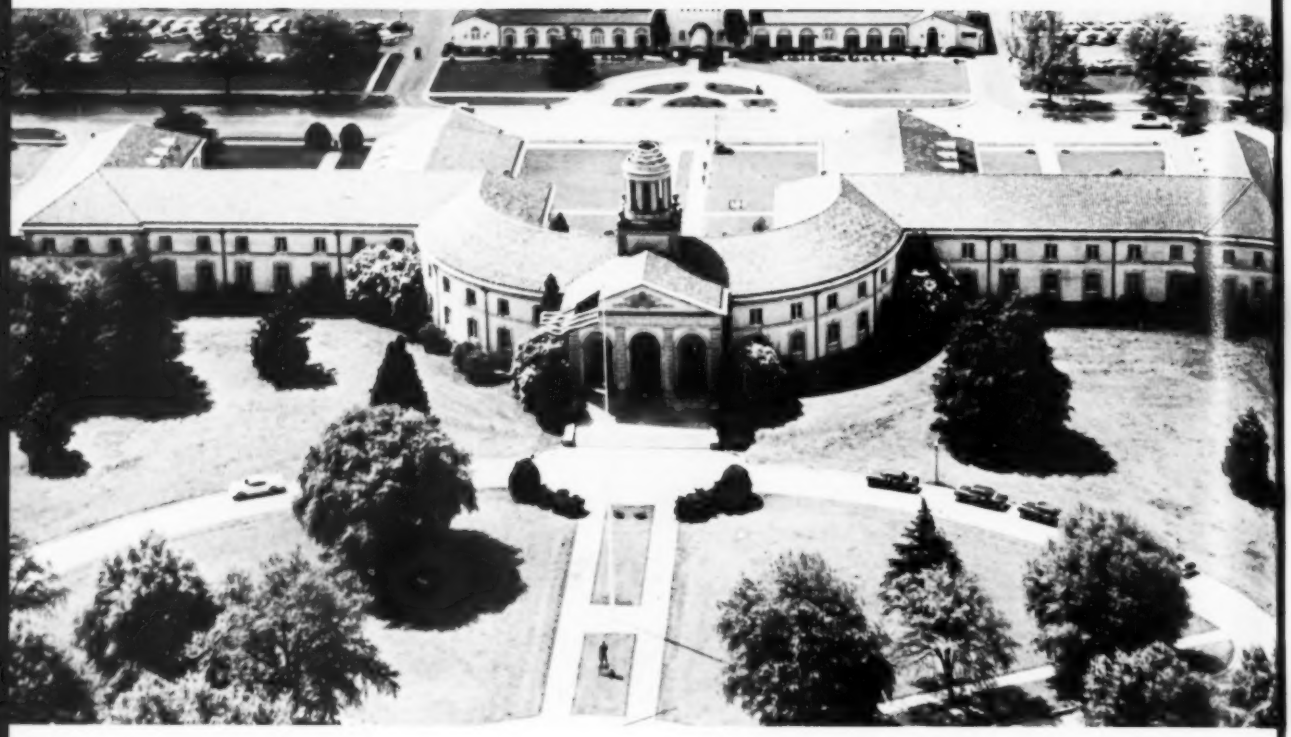
INFANTRY



U. S. ARMY INFANTRY SCHOOL

Maj Gen Hugh P. Harris
Commandant
Brig Gen A. D. Surles Jr.
Assistant Commandant
Col Richard W. Keyes
Deputy Assistant Commandant

Departments

Lt Col Louis A. Williams
Airborne-Air Mobility
Col Willard E. Harrison
Command & Staff
Col Glenn H. Gardner
Communication
Col Paul T. Clifford
Ground Mobility
Lt Col Francis H. Gregg
Non-Resident Instruction
Col Bernard G. Teeters
Ranger
Col Harley T. Marsh Jr.
Special Subjects
Col Samuel T. McDowell
Weapons
Col Otto R. Koch
The Student Brigade

Academic Staff Offices

Col Cyril D. Sterner
Combat Developments
Col William H. Birdsong
Director of Instruction
Col John W. Jackson
Operations
Col Theodore Leonard
Editorial & Pictorial
Lt Col Ted Fuller
Secretary

FOLLOW ME!

***INFANTRY* ADVISORY BOARD**

General G. H. Decker
General C. D. Eddleman
General Clark L. Ruffner
General J. E. Moore
General Herbert B. Powell
General G. S. Meloy Jr.
Lt Gen Paul D. Adams
Lt Gen Paul L. Freeman Jr.
Lt Gen Lionel M. McGarr
Maj Gen Paul W. Caraway
Maj Gen John G. Van Houten
Maj Gen John S. Upham Jr.
Maj Gen J. F. R. Seitz
Maj Gen Louis W. Truman
Maj Gen J. H. Michaelis
Maj Gen Phillip F. Lindeman
Maj Gen William W. Quinn
Maj Gen Charles E. Beauchamp
Maj Gen F. T. Pachler
Maj Gen Ben Harrell
Maj Gen William C. Purnell
Maj Gen J. E. Rudder

INFANTRY

The Professional Magazine for Infantrymen

PUBLICATION OF THE
UNITED STATES ARMY INFANTRY SCHOOL

Vol. 51 July-August 1961 No. 4

The Marshall Awards

Page 2 Page 46

Articles

A New Look at Defensive Tactics ... ... *Maj William A. Brown* 8
Paik-Ho ... ... *Maj Gen F. T. Pachler* 13
The M79 Closes the Gap ... ... *Capt Robert Byrom & Lt Norman L. Carlton* 16
Blind, Halt, Destroy! ... ... *Capt Donald G. McRae* 20
Bah Bah Black Sheep ... ... *Capt Manfred Kelman* 24
The Czechoslovak Army ... ... *Capt O. Preston Chaney Jr* 26
Proven—The Opposing Forces Test ... ... *Maj William R. Ellis* 30
Troop Leading Steps Work ... ... *Lt Jerry L. Sellentin* 32
Officer Candidate Training 34
An Infantryman ... ... *Lt Col Sidney B. Berry Jr* 36
Field Expedient Transparencies ... ... *Alan C. Ramsay* 39
The Days of King Zog ... ... *Lt Col A. E. Seifert* 42
Explosive Firing Systems ... ... *Maj Frank H. Armstrong* 44
Make Interest Pay Dividends ... ... *Capt Davant T. Williams* 51
Infantry Reorganization 54
Artillery Supporting Fires ... ... *Capt Charles B. Lee* 55
River Navigation ... ... *Lt Jarold L. Hutchison* 58
Get the Most from Your AN/PRC 10 ... *Lt William A. Hamilton* 60
Feathers Aren't Birds ... ... *Capt Frank J. Simmons* 61
The USARCARIB School 63
Meet an ROTC Unit ... ... *Capt Roy J. Young* 64

Departments

Infantry Around the World 6
Your Infantry Career 18
Into the Enemy's Trap — an editorial 23
Combat Lessons 43
What's New for Infantrymen 66
The Monthly List 68

Editorial Department
Lt Colonel J. S. Douglas, Editor
Lt Robert F. Sanchez
Mrs. Esther L. Jones

Production Department
Capt Paul R. Lunsford

Business Office
Mrs. Martha L. Biskup

Credits
Art Assistance: Graphics Branch, EPO, USAIS
Photos: U. S. Army Signal Corps unless otherwise stated. Technical assistance by Signal Corps Photo Lab, Fort Benning, Georgia.

INFANTRY is published bi-monthly at the U. S. Army Infantry School by the Book Department, under supervision of the Editorial and Pictorial Office, to provide current doctrinal information on Infantry organization, weapons, equipment, tactics, and techniques, and to provide a forum for progressive military thinking through controversial and thought-provoking articles. Publication of material, however, does not necessarily reflect official thinking or indorsement by the U. S. Army Infantry School.

Subscription Rates: 1 year, $4; 2 years, $7; 3 years, $10. Foreign (non APO) subscribers 60¢ *per year* postage.
Your subscription will expire as shown by a 3-digit number on your address label. The first two digits show the month; the last digit shows the year. For example, "036" shows March (03) in 1966 (6) as the terminal issue. Please use subscription blank inside the magazine to renew.

Correspondence: Address all correspondence to Editor, *Infantry* Magazine, EPO, USAIS, Fort Benning, Georgia. Please use full address.

Manuscripts: All manuscripts must be accompanied by a self-addressed, stamped return envelope. Acknowledgement within 30 days. Payment upon publication.

Entered as second-class matter 11 June 1948 at the post office, Columbus, Georgia, under the Act of March 3, 1879. Return postage is guaranteed.

A MARSHALL AWARD
Selection

Raid and Destroy!

Capt John G. Pappageorge, Inf

ROBERTSON felt a trickle of sweat move slowly down the bridge of his nose. He wondered absently if it had left a white streak on his camouflaged, blackened face. A soft breeze stirred and he shivered. He and the others were some 7,000 meters behind enemy lines. There was no moon. The jetblack night shielded them protectively against any prying enemy eyes. Robertson felt good. He felt safe; secure.

Earlier, the same black night had held ominous danger and insecurity for Robertson and his buddy Perez. Shortly after successfully infiltrating the enemy's front lines, the patrol was fired upon by a roving enemy security patrol. They had become separated from the rest of the patrol during the process of breaking contact with the enemy.

For four hours, he and Perez had worked their way carefully to the northeast, toward the vicinity of the objective. At last they had arrived at the preselected rallying point that had been chosen by their patrol leader for just such a contingency. The rest of the patrol had arrived only minutes before.

Sgt Edmonds, the assistant patrol leader, directed Robertson and Perez to their respective positions in the security perimeter. The sergeant briefed the new arrivals. They were given the exact location of the patrol (this had been verified by the patrol leader upon arrival). Lieutenant Achillies, the patrol leader, and his team leaders had already departed for a "leaders' reconnaissance" of the objective area. Sgt. Edmonds went over the "contingency plan" that would be put into effect if the recon party was accidentally discovered by the enemy.

"Your mission will be to raid and destroy the enemy missile launcher located at coordinates GL980724," the Colonel had said. That was almost 36 hours ago, Achillies thought. So far everything had gone according to plan. For the hundredth time, he mentally reviewed the plan of attack that he

and the patrol had carefully rehearsed on similar terrain back in the battle group area (Figure 1).

Achillies and his security team leader had satisfied themselves as to a location for the left security position. Now they worked their way carefully back to where the assault team leader and the support team leader were waiting. The recon was completed.

The recon had taken 45 nerve-racking minutes. It had been well worth every precious second. The leaders compared notes, and Lt Achillies revised the original plan of attack by making minor changes to suit the actual situation they had encountered on the ground. Lt Achillies led the way back to the rallying point.

Sgt Edmonds and the four men who made up the demolition and search teams listened carefully as Lt Achillies gave them their final instructions. He was careful to cover the "contingency plan" that would be used in the event that the patrol was discovered while moving into position. These men would follow behind the assault element and not participate in the actual assault. They, along with the command group, constituted the reserve in the event that the assault team stopped or ran into difficulty. He finished his briefing. "Stay calm," he told himself, "and allow adequate time for your subordinate leaders to brief their men." He glanced anxiously at his watch. "We'll move out in ten minutes," he told Sgt Edmonds.

The assault element had been the last group to leave the rallying point. It had the shortest distance to travel and, being the largest element, would be more prone to premature discovery by the enemy. Now it, too, was in position. Only the leaders of the left security team had not reported yet. The patrol's messenger listened intently to the low, rushing noise of his PRC-6 radio. Abruptly, the rushing noise "cutout" in four regularly spaced intervals. The left security team was in position. It had signaled silently by depressing the push-to-talk button on its radio four times. Voice transmission was unnecessary. The signal had been prearranged. The radio operator tapped the lieutenant. "Everybody's set," he whispered.

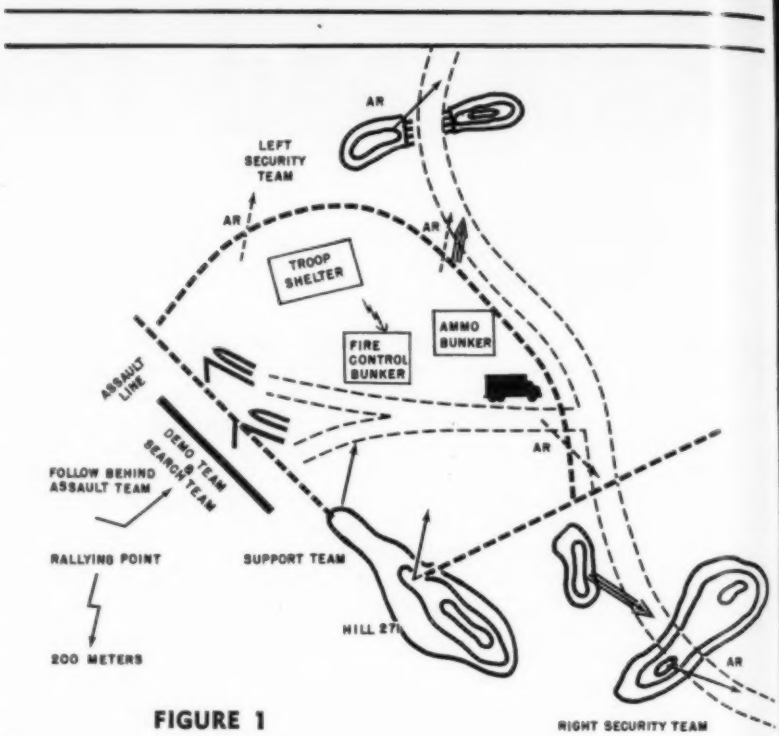


FIGURE 1

The primary signal to initiate the attack was to be a shot fired by Lt Achillies. The element of surprise belonged to the patrol. The lieutenant took careful aim on an enemy sentry. Funny thing about the element of surprise, he thought. It always seems such a clever and dashing thing in the textbooks. At this level, it's a grim thing. Achillies squeezed the trigger. The force of the bullet slammed the sentry to the ground.

That first shot raised the curtain on a spectacular and deadly fireworks display. The support team's machineguns raked the objective area. M-79 grenade guns pumped shell after shell into the enemy machinegun positions. Added to these fires were those of the assault team. For thirty seconds, steel jacketed bullets ripped into the objective area. The noise was deafening.

"Fire the signal," yelled Achillies. Seconds later, a red-star parachute flare drifted gently to earth. This signal served three purposes. To the assault team, it meant the assault must begin. To the men of the support team, it meant that their fires must be shifted. To the aerial artillery observer flying over "no-man's" land, it was the alternate signal for calling in supporting artillery fires to seal the objective. This convenient alternate signal had taken into account the possibility that radio contact with the artillery observer might not be possible.

There was no need for silence now. The assault team surged forward. Above the din, the team leader's bellowed commands could be heard. "Straighten out the line, Peters; keep moving." "Keep your AR on that shelter, Adams; don't let 'em out." "Grenades, grenades —now, use your grenades!"

The firing died down. The assault team began its consolidation and reorganization on the far side of the objective. Already the demolition team had begun placing its charges. The search team, assisted by the messenger and radio opera-

tor, was gathering up equipment and papers that would be of intelligence value. Sgt Edmonds moved over to the assault team's area to get a report from its leader. Lt Achillies, satisfied that all was going well, positioned himself where he could supervise the work of the demolition team.

The security team leader had chosen to position himself with his left security team because this represented the most dangerous route into the objective area. The team listened intently as the fire on the objective died down. The radio crackled, "Objective secured, objective secured, over." The leader acknowledged the transmission. "They made it," he told the others. "In another two or three minutes it will all be over." Protective artillery rounds which would help seal the objective began falling on the road junction up ahead of them.

Suddenly, they heard a vehicle roaring down the trail toward them. Its headlights switched on. It was an enemy weapons carrier. The team members watched carefully as it approached. Robertson began firing his AR, and Perez began pumping grenade shells out of his M-79. The team leader reported his situation to the patrol leader via radio, then joined the others in firing into the badly mangled and disorganized enemy force.

At last the demolition men completed rigging their charges. Although it had taken about one

Sgt Edmonds

minute to prepare the charges, it had seemed like an eternity to those waiting for the signal to withdraw. The fire control apparatus for the enemy missiles represented the most critical item of the entire system. It would be difficult for the enemy to replace it. Explosives would completely destroy it.

Lt Achillies personally checked the charges and the firing system. The primary signal for withdrawal of the assault element was a verbal one. "Fire in the hole," yelled Achillies. This familiar cry, used so often in training with demolitions, was taken up by every man who heard it.

The assault element withdrew rapidly back across the objective. Every man was yelling the signal. That's one way to make sure everybody gets the word, thought Achillies. The demolition team leader, trailing his withdrawing team, reported that everyone was clear as he passed Lt Achillies at the bunker. "Activate your fuzes,"

Lt Achillies

Achillies told the men, "and let's get out of here. She'll blow in forty-five seconds."

They then joined the assault team which had halted a short distance from the objective. The security and support elements were still in position. Everyone there was waiting tensely. "No sweat," said a 'demo' man, confidently. "The charges are double primed and double fuzed. They'll blow the first time."

The explosion shook the ground. A column of dirt, smoke, and debris shot upward. "Call in the others," said Achillies to the radio man, "and fire your flare."

Both signals had been received by support and security. They hurried back to the rallying point. The aerial artillery observer also saw the pyrotechnic signal. "Cease fire; end of mission," he said into

Pfc Perez

his radio transmitter. Then he put in a call to the battle group S-3 to give him the good news. The pilot banked his aircraft and headed for his IP. It would be his job to help vector in the helicopters that would pick up the patrol some 1,000 meters from the now-destroyed objective.

Back at the rallying point, the patrol quickly reorganized. The leaders were grouped around Lt Achillies. "Good job," he said, "but we aren't through yet. Keep everybody closed up in the formation, and keep them quiet. We still have a 1,000-meter walk to the pick-up point." The patrol moved out.

The pickup went smoothly. The patrol was now winging its way home. Lt Achillies sat quietly in his seat and thought about what had happened on this — his first combat patrol. He knew they had done their job well. His mind recalled the words his instructor had used when he was in Ranger School. "Rangers, stick this next little gem under your patrol caps and don't forget it: A simple but detailed plan, thoroughly rehearsed, and violently executed offers the best chance of success for a combat patrol." As had just been shown, he was right.

Capt Pappageorge received his commission at the US Military Academy in 1954, and served in CONUS as platoon leader and company executive officer. In Japan and Korea he served as platoon leader and company commander respectively. A graduate of the Airborne, Ranger, and Pathfinder Courses, he was an instructor at the Ranger Mountain Camp, Dahlonega, Ga., and served as a Ranger Section Leader at Fort Benning. A Career Course graduate, he is now assigned to the US Military Academy.

INFANTRY AROUND THE WORLD

1st Battle Group, 27th Infantry, 25th Division

USARPAC

IN every sense of the term, the 1st Battle Group, 27th Infantry, is a Twentieth Century outfit. Organized a year and a month after the turn of the century, the celebrated Wolfhounds have always maintained a combat-ready posture in keeping with the most modern advances in warfare.

The 27th was hardly a year old before it was in the thick of the fighting in the Philippine Insurrection, where it earned the personal congratulations of President Theodore Roosevelt for victory at the Battle of Bayan on May 2, 1902. That date is still commemorated as Organization Day by the Wolfhounds.

World War I had almost drawn to a close when the 27th, then in the Philippines, was shipped to Siberia as part of the Allied Expeditionary Force. In two years of swift forays against the Bolsheviks, the 27th earned a reputation as a tough, tenacious foe.

Bolshevik troops, awed by the relentless ferocity of the soldiers of the 27th, called them the "Wolfhounds," a nickname which was to become an official part of the unit's designation some fifty years later in the third year of the Korean Conflict.

Pearl Harbor Day found the Wolfhounds at Schofield Barracks, Hawaii, as part of the newly-formed 25th Division. In the months and years that followed, they played a

major part in earning the division its "Tropic Lightning" nickname in battles from Guadalcanal to Luzon, adding four more battle streamers to the colors of the 27th. In 1945, the Wolfhounds landed in Japan as part of the Occupation Forces.

Having discovered 140 Japanese children existing in a pathetic collection of huts euphemistically called an orphanage, these superb fighting men revealed a humanitarian spirit as great as the *esprit* for which they have become renowned. On Christmas Day, 1949, the Wolfhounds began a project which was to set them apart in military annals. Monthly collections began at that time and have never ceased; joined by the men of the 8th Artillery Battalion in 1955, these soldier-philanthropists have donated $315,000 to date toward the support of their adopted wards.

In the first week of July 1950, the Wolfhounds were ordered into the Korean Conflict, arriving on the war-torn peninsula on July 10. Utilized as a "fire brigade" they ranged up and down the front, blunting one enemy offensive after another.

In October 1954, the Wolfhounds returned to their old home at Schofield Barracks in Hawaii. Here, like all 25th Division units, they follow a tough, practical training program designed to prepare them for any combat situation, but particularly those which may be found in Southeast Asia.

With terrain uniquely suited to

Realistic combat problems are nothing new to the Wolfhounds.

Members of the Wolfhounds pass in review.

Swinging across a wide stream, a Wolfhound rifleman participates in a river crossing exercise. Below him, other Wolfhounds cross in a more conventional manner.

A Wolfhound squad descends a ridge into the jungle as a helicopter prepares to land reinforcements.

their training needs, the Wolfhounds get the finest possible practical experience in operations in the jungle and under tropical conditions. In areas thick with dense, tropical foliage, they learn to live on the land, to move with speed and precision, and to attack swiftly and strongly.

Adapting modern methods of warfare to the terrain, the Wolfhounds and their brothers-in-arms of the 25th Infantry Division exploit the use of the helicopter and fixed-wing aircraft to the maximum extent. Also, they have learned to travel on foot through the jungle for great distances, carrying a minimum of equipment, and arriving at their objective ready to strike with vigor and determination.

An unusual aspect of this training is the inclusion of situations dealing with problems offered by civilian populations in areas in which the Wolfhounds might be called upon to enter. The division has erected "native villages," inhabited by soldiers dressed in civilian garb, in order to give practical training to its elements in dealing with natives whose loyalty to one side or the other is often in question.

Three times the 27th Infantry and its subordinate elements have earned the Nation's highest unit award, the Distinguished Unit Citation; once units of the Wolfhounds received a rare citation in General Orders for Battle Honors; eleven members of the 27th have earned the Medal of Honor; and the colorful Wolfhounds are known all over the world for their humanitarian deeds for the orphans of Japan.

The world-famous *esprit* of the Wolfhounds, their proud record in peace and war, and their high professional standards of training today leave no doubt that the honors won in the past will be matched or exceeded in the future.

Wolfhounds charge up a slope to take up new positions during training in the mountains.

Wolfhound machinegunners silhouetted against a dying flare in the background during night combat problems.

A New Look at Defensive Tactics

Maj William A. Brown, Inf

SINCE tactics are a science, they are understandably subject to change. As evidence of this, many significant changes have recently been made in battle group defensive doctrine. These changes, which are the result of considered observation, study, and experimentation, are not revolutionary in nature. But, as any Infantry commander will recognize, they are substantive enough to warrant the statement that there is indeed a "new look" in defensive tactics.

Essentially this "new look" involves several innovations, some of which are outlined below:

- A battle group no longer conducts different variations (layer, strong point, etc.) of the defense. According to the new defensive doctrine, the battle group conducts only an *area* defense. The term "position defense" is no longer used.
- The frontage for a battle group sector has been reduced from 8000 meters (±) to 6000 meters (−). Correspondingly, the frontage for a rifle company has been reduced from 2000 (±) to 1500 meters (−). These frontages are considered to be the maximum which a unit can defend under ideal conditions and on ideal terrain.
- Whenever possible, the supporting weapons of reserve elements of the battle group now render maximum support to the forward rifle companies. (While this is not a new role for the reserve, the degree of emphasis on the reserve support role has increased.) Additionally, when the reserve is committed, the battle group commander utilizes *all the combat power necessary to accomplish the mission.* Under former defensive concepts, the commander committing his reserve used the *minimum forces* necessary to accomplish the mission. Thus, under this new doctrine, there is a change in emphasis and a greater aggressiveness in use of the reserve.

Each of these changes was made primarily to obtain a greater use of the battle group's combat power, and to give the battle group a greater capability for carrying out its defensive assignments. Effort was also made to simplify the terminology and overlay techniques so that they might be readily understood by all concerned.

In order to better understand the impact of some of these changes, the following problem and solution are presented as an illustration of what the new doctrine means to the tactical commander.

SPECIAL SITUATION:

CG, 10th Inf Div, has assigned the 2d BG, 7th Inf, the area shown in Figure 1, and has directed that the BG defend assigned sector. (NOTE: This is an area defense). He also directed that the BG maintain contact with 3d Sq, 7th Cav, and be prepared to refuse the battle group north (left) flank when the Sq withdraws from the FEBA in accordance with his concept of the operation.

Co A, 2d Med Tk Bn, 69th Armor, has been attached to the battle group. The 1st How Bn (105mm/155mm) (SP), 5th Arty, is in direct support of the 2d BG, 7th Inf, and the 4th How Bn (105mm/155mm) (Towed), 27th Arty, is reinforcing fires of the direct support battalion. No nuclear weapons have been allocated to the BG at this time.

USAIS POSITION

White Creek is fordable with difficulty by both personnel and vehicles. Trees in the area are scattered, and the area is relatively free of undergrowth. Cover and concealment range from fair to good throughout the area. Forward of the COPL, the terrain in the southern half of the sector contains several natural tank obstacles which will severely limit the use of tanks in this area.

TACTICAL REQUIREMENT:

You are CO, 2d BG, 7th Inf. Show on Figure 1 your scheme of maneuver for the defense of your assigned sector to include:

- The disposition of forces along the FEBA.
- The organization and control of the COPL, including the composition and size of forces occupying the COPL.
- The primary and supplementary position(s) of the reserve rifle company(ies).
- What mission(s) do you assign to the reserve rifle company(ies)?
- What mission(s) do you assign:
  - Co A, 2d Med Tk Bn, 69th Armor?
  - Assault Weapon Platoon?
  - Heavy Mortar Platoon?
  - Radar Section?
  - Reconnaissance Platoon?

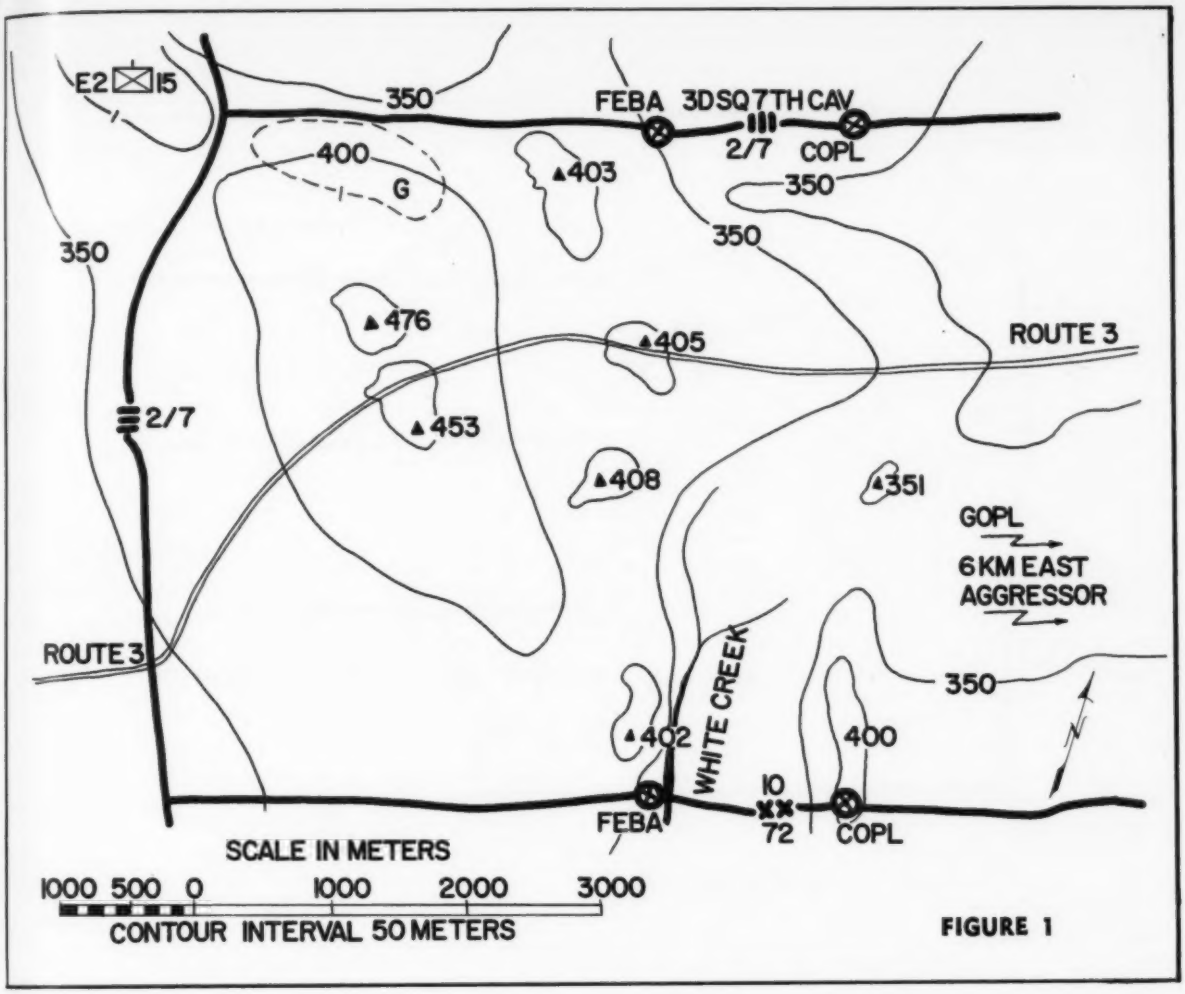


FIGURE 1

Do not read the solution (below) until you have solved the problem.

(See Figure 2).

DISPOSITION OF FORCES ON FEBA

In organizing his defense, the battle group commander analyzed his mission in conjunction with the division commander's concept. In his estimate of the situation, he reasoned that to accomplish this mission he must place sufficient strength forward to stop the enemy in front of the FEBA, while retaining both a blocking and a counterattack capability. In analyzing the terrain, he recognized that the ridge approach (along ROUTE 3) was the most dangerous approach into his area. He also analyzed other possible avenues of approach into the position, and visualized company dispositions along the FEBA required to block the avenue of approach. He then placed Co A, B, C, and D forward, using Co E (−) (with a tk platoon attached) and Co A, 2d Med Tk Bn, 69th Armor (−), (with rifle platoon attached), in reserve. This tentatively allocated enough combat power to each avenue of approach.

To his forward companies the commander assigned frontages according to the natural defensive strength and relative importance of their defense area. In this situation, Cos A, B, and C are assigned less frontage than Co D, because Co D has good defensive terrain on HILL 402 with an obstacle (White Creek) to its front. Additionally, approaches into its area are less favorable. Thus, through an equitable assignment of frontage, equal defensive tasks are given to forward companies. Through intelligent allocation of fires and weapons, the commander can further equalize defensive tasks.

Boundaries between the forward companies extend far enough to the rear to provide adequate areas to organize their defenses. The boundary extends forward through

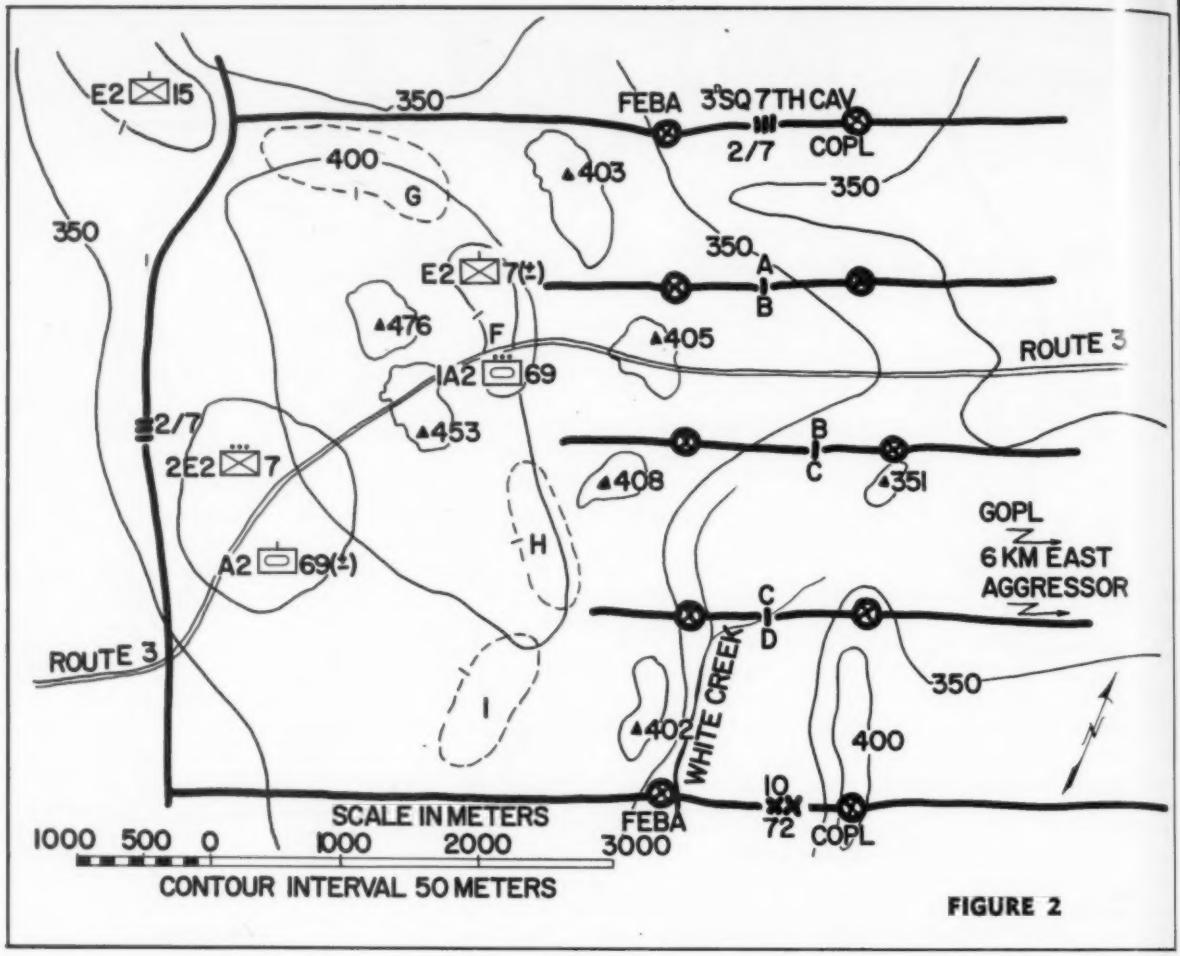


FIGURE 2

the COPL to the limit of effective ground observation. In the event the COP is to be controlled by a battle group reserve commander, the boundaries between companies will be extended forward to a point short of the COPL. Boundaries are located to avoid dividing responsibility for defending avenues of approach or key terrain features. (Responsibility may be divided when the area is too large to be covered by a single unit. However, it may be desirable to attach an extra platoon to one company rather than divide responsibility.)

ORGANIZATION AND CONTROL OF THE COPL

The general location of the COPL is usually prescribed by the division commander, who designates limiting points on battle group boundaries. The force on the COPL usually consists of one reinforced rifle platoon in front of each forward company, and is usually provided by the forward companies or by troops attached to the forward companies *for this purpose.*

Tanks may be attached specifically for employment on the COPL, but normally, not more than one section will be employed to reinforce the COP forward of one company. These revert to their parent unit or other defensive assignment when the COP is withdrawn.

Control of the COP is indicated by extending boundaries between companies forward of the COPL. The combat outpost is usually controlled by the forward companies because of the requirement for close coordination from within the battle area. There will be situations when a reserve company will both man and control the COP, such as one in which the battle group has a limited time to prepare for the defense, and when it is essential that forward companies have as large a force as possible to work on preparing positions along the FEBA.

PRIMARY AND SUPPLEMENTARY POSITIONS OF RESERVE

The battle group commander best uses his reserve force, Co E, by placing it to block the most dangerous probable enemy penetration. In this position, Co E protects key terrain, controls a dangerous avenue of approach, and can limit a penetration if it occurs. A strong, highly mobile counterattack capability is provided by positioning the tank company in an assembly area from which it can move to any part of the battle area. Preparation of supplementary positions G, H

and I allows a refusal of the left flank, and provides the commander with greater flexibility, the capability for all-around defense, and defense in depth. Cross attachment of tanks and Infantry in the reserve exploits the best capabilities of both reserve units.

REAR AREA SECURITY

The reserve is assigned a contingency of providing rear area security forces. While there is no known threat of enemy airborne forces, infiltrators, or guerrillas, planning now will provide an effective reaction in the event such a threat develops. A separate plan for rear area security is not prepared at battle group level. However, rear area security missions are included in the operation order, and are integrated into the fire support plan, barrier plan, surveillance plan, and patrol plan. Coordinated planning must insure elimination (within the assigned area of responsibility) of any hostile force capable of affecting the battle group's mission. It must provide for early detection of such a force by observation posts, patrols, roadblocks, aerial surveillance, and available electronic ground surveillance.

UTILIZATION OF THE ATTACHED TANK COMPANY

If the tank company is attached to the battle group in defense, all, or a major portion of it, is usually retained in reserve to participate in the counterattack and to provide antitank defense in depth. This takes best advantage of the offensive capability of tank elements. When necessary, one or more tank platoons may be attached to forward rifle companies to thicken the antitank defenses or to cover armor approaches not covered by the assault weapon platoon.

There are several possible solutions for employing the tank company. One is to attach tank platoons to forward rifle companies, maintaining company headquarters under battle group control. This places maximum antitank protection forward, but fails to take full advantage of the inherent firepower, mobility and shock action of tanks. In addition, the headquarters, which is organized to control units in offensive and defensive combat, is not suitably utilized.

Another solution is to attach a tank platoon each to Co A and Co B, retaining the company (−) under battle group control. This solution, more desirable than the first, gains antitank defense forward, but retains an offensive capability with the company (−).

The most desirable solution, considering the BG's mission, frontage, and use of the assault weapon platoon and company antitank weapons, is one that retains the maximum offensive capability of the tanks. This solution places the company, less only one platoon (atch to Co E), in reserve for primary use in a counterattack role. Attachment of a rifle platoon to the tank company (−) gives the tank commander a substantial fighting team.

While the tank company's capabilities are best exploited in an offensive role, it may become necessary to employ this force in a blocking role to preserve the integrity of the battle group's position. Consequently, the tank company must be prepared to occupy a blocking position if the situation dictates.

THE ASSAULT WEAPON PLATOON

Squads of the assault weapon platoon are usually placed where they can best destroy enemy tanks forward of the battle area. They are located within forward company areas to cover tank approaches. In this situation, the platoon (minus three squads) is attached to Co B, two squads are attached to Co A, and one squad is attached to Co C. Since the approach into Co D's sector is not favorable for tanks, no assault weapons are attached to this company. With only five assault weapons available, the commander must use them where most needed, rather than arbitrarily spreading them across the front.

The assault weapon platoon leader makes recommendations for employment of his platoon. He may recommend that the platoon be employed in general support, in direct support of certain units, attached to various units, or in a combination of these methods.

The attached or supporting tank company commander normally serves as the BG's principal antitank advisor, in which case the assault weapon platoon leader submits recommendations to him. This arrangement provides the battle group commander with the best available advice on antitank defense.

THE HEAVY MORTAR PLATOON

The heavy mortar platoon is usually employed in general support to insure flexibility in massing and coordinating of fires. It is positioned where it can cover the most dangerous avenue(s) of approach. In this situation it is located to cover approaches in front of Cos A and B. Sections may operate in GS from separated position areas when the situation so dictates. The battle group commander prescribes the missions and general position area(s) of the platoon. He may also require the platoon to support the COP, in which case it may be necessary to position a section (or sections) forward to accomplish this mission.

THE RADAR SECTION

The radar section is a vital part of the surveillance capability of the battle group. Short-range teams can reliably detect small moving targets (a crawling soldier may be detected out to 1300 meters), and thus can add considerably to the defensive strength of forward units. These teams are best employed well forward, covering to the front and flanks of forward companies, and when located in a company area are usually attached to the company. In this situation, the short-range team organic to the attached tank company is employed in the reserve company area for rear area surveillance.

The medium range radar teams, organic to the battle group, are usually retained in general support. Their greater range (up to 4400 meters for a walking soldier and 17,250 meters for a moving truck) enables them effectively to complement and extend the range of

the short range radars.

RECONNAISSANCE PLATOON

The reconnaissance platoon provides an excellent capability for maintaining contact between the COP and the GOP. Upon withdrawal of the GOP, the platoon may screen flanks and gaps between COP elements, and may assist elements of the COP in their withdrawal. Upon withdrawal of the COP, the platoon in this situation will screen the north flank and maintain contact with the 3d Recon Sq, 7th Cav.

DISCUSSION

Organization of a battle group defensive sector is a relatively uncomplicated operation, since the techniques and procedures are simple, logical, and easily understood. This is not to say that a commander can take a template or a school solution and apply it to any given situation; instead, he must make his own estimate of the situation, and then make his own decision.

Essentially, then, what is required is a sound knowledge of the tools necessary to accomplish this job. The commander must know the fundamentals of defense; the capabilities and limitations of the weapons, equipment, and personnel in the units; and the enemy. And he must know how to apply these to the soldier's workbench—the terrain.

Used together, these tools can do the job. How successfully they do the job is determined in great part by the ingenuity, imagination, and professional ability of the commander.

This article represents US Army Infantry School position pending approval of changes to FM 7-40 recommended to USCONARC. If recommended changes are approved, this material becomes doctrine.

Maj Brown, a frequent contributor to *Infantry*, received his OCS commission in 1945. He served in Panama, Korea, and Germany, and has attended the Airborne and Nuclear Weapons Employment Courses. A graduate of the Command and General Staff College, he is now an instructor in the Command and Staff Department, USAIS.

Bring Back the Mule

Capt James R. Woodall, Inf

Let's bring back the mule. Not the M74 wheeled one, but the good old, real live, ornery one. The M1 mule.

Look at where the world's applecart is being upset the most — jungle country, places where the vegetation is thick, the mountains are high, and the roads are poor if they exist at all. Suppose we had to send a STRAC unit there right now. We always seem to assume existence of favorable conditions — like the enemy's being nice and not shooting down our aircraft, the weather's behaving itself, and our having enough planes for airdrop of supplies. We also take for granted helicopters for troop and supply shifts. But if we take a harder look we'll know that it'll probably be Korea all over again — a "hand-carried" war. That's where the M1 mule comes in. Why don't we let the mule do a mule's work? The only trouble with that is that we have neither mules nor the people who can handle them.

There is a way to correct this deficiency, and with a minimum

of expense and effort: activate a pack mule unit, a unit which not only develops doctrine but also teaches animal-carry techniques and doctrine to other units. Let this pack mule unit send teams to all STRAC elements and conduct training for unit-selected handlers. Surely there are still "farm boys" who would enjoy the job. Within a few hours' time a nucleus of animal handlers could be formed in every battalion or battle group.

The mules? There's the cost-saver! Only the pack mule unit has them, and they are trucked along with the instruction teams. Or as an even better costsaver, pack animals might be obtained from local farm areas. An orientation as to the capabilities, limitations, and personality of the yak, camel, ox, llama and elephant might also prove useful in some circumstances. If and when the STRAC unit needed pack animals, the logistical back-up folks can find them somewhere and turn them over to the already-trained handlers. Then our soldiers can move through "impassable" areas without toting hundreds of pounds of gear, and thus will be a little fresher and a little better able to do their own jobs, when they must.

Some of the most modern armies in the world have mules for use as pack animals. There's a need for that ornery critter in our Army too. Why should *we* be stubborn and not do something about it?

PAIK-HO

WINTER COMBAT TRAINING IN KOREA

Maj Gen F. T. Pachler

"Paik-ho" in Korean means "Snow-Tiger"—a shadowy beast of the frozen highlands. To the Korean natives his presence is most felt when the icy blasts of the Siberian winds drive him down near the villages to hunt. Though he is seldom seen, his signs appear wherever the mercury plummets below the zero mark—"snow tiger weather."

"Paik-ho" to a 7th Infantry Division soldier in Korea during January 1961 meant a field training exercise over rugged Korean terrain. "Paik-ho" (or FTX "SNOW TIGER II") was conducted against a general war setting. The 7th Division had prepared for this January exercise with a Division FTX in December which wove together the small unit fighting teams developed in earlier rifle squad, rifle company, tank company, cavalry troop, and battle group exercises.

The objective of Paik-ho was to train commanders, staffs, and troops in the conduct of offensive and defensive operations under simulated combat conditions, with emphasis placed on small unit tactics. The general schemes of maneuver were made prior to actual play so commanders had the maximum opportunity to observe the performance of their smaller units. Participating troops came from American, Korean, Thai, and Turkish elements of the United Nations Command. All played an important part in the success of the exercise; however, this article is limited to operations of the 7th Infantry Division.

In this exercise units applied techniques that would be employed if the Cold War became hotter. To all those who have not been to Korea, this article will try to picture what you can expect. To all those who may have a second or third Korean tour, an attempt will be made to offer comparison with the previous conditions as you remember them. To all those whose Korean days are behind them, settle back and hear this version of men doing men's jobs here on "Freedom's Frontier."

As the units took to the field for Paik-ho, a massive cold front moved in from Siberia, plunging the temperature down to 15 degrees below zero in a manner which reflected an unholy alliance between the weather man and the exercise scenario writer. Even to troops hardened to daily outdoor training during the Korean winter, these new conditions marked a real test.

This sudden drop to sub-zero temperature struck a familiar note to those veterans of the first long winter of the Korean War. The fierce cold presented difficulties, but now there was a noticeable difference. The individual clothing and equipment provided additional protection not available in those early Korean days. The thermal boots, OG shirts, fur-trimmed parka hoods, mohair frieze field jacket and trouser liners were all good additions to the Korean War winter equipment of parkas and mountain sleeping bags. To the World War II veterans of the wool overcoat and blanket sleeping bag days, the contrast was tremendous.

The cold played havoc with the unwary, but procedures learned in previous exercises minimized the effect. Alcohol was added to the gasoline tanks of vehicles to pre-

Footgear getting the full treatment.

vent moisture from gathering in the gas lines and freezing. Individual weapons were kept dry to prevent freezing. Knowledge of the wind-chill factor led to careful selection of individual troop bivouac sites. Careful pitching and banking of pup tents permitted conservation of body heat while sleeping. Appreciation of insulation against the penetrating cold led to use of air mattresses and locally available insulation material between individual sleeping bags and frozen ground. To prevent their freezing, boots were kept between the sleeping bag and its cover while individuals slept. The individual soldier was learning to live and survive in the cold.

The bitter Korean winter provides the best period for such large-scale military operations, despite the discomfort of the frigid weather and the danger of cold injuries. Freezing temperatures gave added firmness to the soft soil of rice paddies. Streams were well below levels reached during spring and summer rainy seasons. An important factor, when operating under restrictions of a peacetime economy, was that in winter the crops had been gathered and maneuver damage was held to an acceptable minimum.

The American soldier, particularly the Infantryman, is a busy man in the troop units in Korea today. Stress is on combat readiness. Korea, due to its rugged topography, is Infantry country. Ridge-running becomes an art. Legs toughen under the grind. New arrivals, who initially puff from climbing a couple of flights of steps, are soon worked into condition. Morale stays high because the troops are busy doing the job for which they were trained.

To participate in "Paik-ho," the Division made a long move over multiple routes from garrison locations to the exercise area. The move itself stressed convoy discipline and tested the operating condition of organic vehicles. It was here that proper maintenance in the past paid off in keeping the units moving.

As "SNOW TIGER II" got underway, exercise play progressed until the Aggressor had made a sizable lodgement south of the present Demilitarized Zone. After the Aggressor had been blunted, the Bayonet Division was unleashed to push north with the mission of eliminating the penetration. Under protection of air strikes and simulated artillery barrages, men traversed the ridgelines in Infantry-tank teams. In some places the tanks supported by fire; on more gentle slopes, the tanks lent their shock action to the Infantry assault; and in still other areas the tanks

Applying the equalizer to an enemy bunker.

Icy roads slowed traffic at danger points.

slashed up the valleys in conjunction with an aggressive Infantry push down the ridgelines. Ridge-running paid off after the Aggressor had been dislodged from his initial position. Swift movement kept him off balance. Proper use of the terrain placed the maximum force where it would do the most good. Use of reserve battle groups to pass through the lead elements in night attacks kept up the momentum in steady, around-the-clock operations.

An interesting phase of the exercise was a Division coordinated night attack of two battle groups at -15 degrees temperature. Enemy control of a key objective would have produced excessive casualties in attempting to seize it in daylight. The Division Commander directed an attack at 2300 hours. In the late afternoon, commanders, including squad leaders, carefully planned and reconnoitered movements. Prior to 2300, units moved with stealth to assembly areas. Promptly, at 2300, elements of six rifle companies simultaneously attacked, and by 0300 they had routed a surprised Aggressor from the position. Thus, by surprise and skill, they captured a difficult objective. The rapidity with which sleeping bags, hot food, and resupply followed reflected the ability of units to sustain operations under these demanding conditions.

Despite the stiff pace of the exercise, logistical backup was pushed forward to provide *three hot meals a day*. Replacements fresh from the States were processed through the Division Replacement Company in the field and joined their new units in field locations. Shower points were pushed up to reserve units which had been passed through in the attack.

Tanks overwatch the Infantry advance.

Action was as realistic as an Aggressor-opposed, non-firing, large-scale exercise could be. One of the unavoidable, but realistic, features was the presence in the exercise area of the native population going about its normal activities.

The exercise was terminated just as the Division attack destroyed the enemy penetration, and preparations were being made for continuing the offensive. Troops began the trek back to home stations to get ready for Army Training Tests, Command Maintenance Inspections, alerts, and other activities to further maintain the state of combat readiness they had attained.

Maj Gen Pachler received his commission in the Infantry upon graduation from the US Military Academy in 1931. A veteran of World War II and Korea, he is a graduate of the Command and General Staff and National War Colleges, and has served on the staff and faculty of both institutions. Gen Pachler currently commands the 7th Infantry Division in Korea, but leaves in July for a new assignment. He is a member of the *Infantry* Advisory Board.

THE MARSHALL AWARDS

Readers of this issue will note that two articles are authored by this year's winners of the General George C. Marshall Awards for Excellence in Writing. This award was initiated last year to recognize the student from each Infantry Officers Career Course who best demonstrated an ability to write for publication. The manuscripts are judged for excellence in the ideas put forth, the originality and clarity of expression, and the contribution to the Infantry and the Army. Manuscripts judged were those which had been submitted for grades as a Course requirement in the Effective Writing Program. Within certain broad limitations, the student was free to select his own subject and to develop it as he desired.

The award itself consists of a plaque with a brass plate, on which is inscribed the name of the award and its purpose, the five-star rank of General of the Army Marshall, and the name of the winner. Each winner receives such a plaque, and also has his name inscribed on a larger plaque which is permanently installed in the Infantry School Headquarters. The winner is guaranteed publication in *Infantry* Magazine, and this year each winner received from *Infantry* a $100 U. S. Savings Bond in payment for his article.

The judges annually include members of *Infantry's* staff and of the Special Subjects Department, USAIS, which sponsors the Effective Writing Program. Recommendations are made by the Chairman of the judging committee, the Chief of the Editorial and Pictorial Office, to the Commandant of the Infantry School, who makes the final decision. Winners' names are disclosed at graduation exercises, at which time they are called forward to receive their awards.

THE M79 CLOSES THE GAP

The latest doctrine on the Army's new grenade launcher.

Capt Robert Byrom, Inf
and Lt Norman L. Carlton, Inf

DESPITE the best efforts of the artillery and the mortars, the small Infantry elements of the Battle Group do not always have readily available and immediately responsive fire support. For the Infantry soldier to hit the fleeting targets of the modern dispersed battlefield, however, he must have his support fire "right here and right now." The place he needs this support the most is between the maximum distance he can throw a grenade and the minimum distance in front of his position that other supporting weapons can safely fire. The M79, 40mm Grenade Launcher is designed to cover this gap. This it does by delivering its six-ounce projectile with a lethal five-meter casualty radius in a shallow trajectory at a speed of 76 meters per second with near-precision accuracy up to a range of 400 meters. It is effective against both area and point targets, and gives the squad and platoon leader an immediately responsive fire support element directly under his command.

The general nomenclature of the M79 is shown in Figure 1, where the names of the five major assemblies are identified. The aluminum alloy barrel is rifled, and the receiver contains the firing mechanism, safety, and barrel locking mechanism. A barrel band (Figure 2) holds the rear sight on the barrel, and a screw directly underneath the barrel band holds the Fore End Assembly to the barrel. The Fore End Assembly is attached to the steel Receiver Group by the fulcrum pin. The receiver itself is recessed well into the stock as is indicated by the position of the safety, and is held to the stock by a large screw as shown in Figure 2.

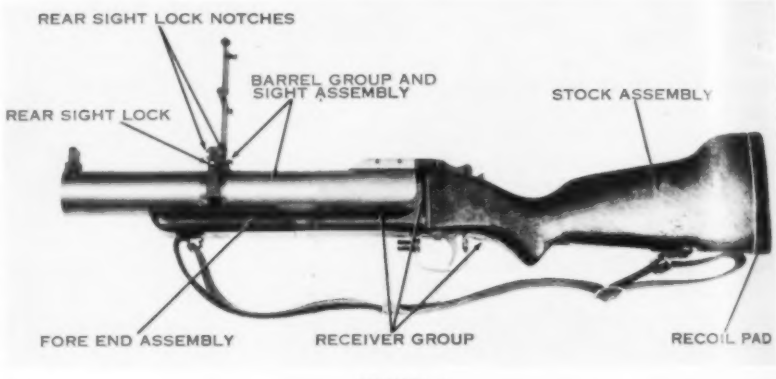


FIGURE 1

The launcher is loaded by pressing the barrel locking lug and breaking it open in the same manner as with a single-barreled shotgun. This action automatically pushes the safety to the rear or "safe" position, cocks the hammer, holds the barrel locking latch in the open position and enables the firer to insert a round into the chamber.

When the firer closes the launcher, the spring loaded barrel locking latch locks the barrel in position by engaging the barrel locking lug. The firer moves the safety forward to the fire position and squeezes the trigger. If he happens to be wearing heavy mittens or gloves, he may release the trigger guard detent assembly and swing the guard either right or

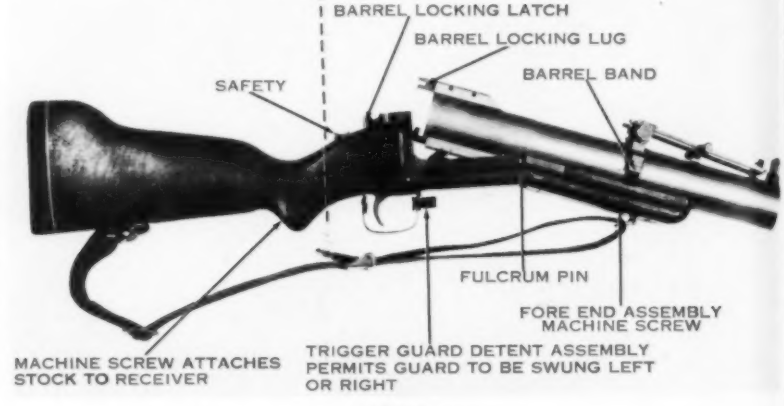

RECEIVER RECESSED TO THIS POINT IN STOCK
BARREL LOCKING LATCH
BARREL LOCKING LUG
BARREL BAND
SAFETY
FULCRUM PIN
FORE END ASSEMBLY MACHINE SCREW
MACHINE SCREW ATTACHES STOCK TO RECEIVER
TRIGGER GUARD DETENT ASSEMBLY PERMITS GUARD TO BE SWUNG LEFT OR RIGHT

FIGURE 2

left out of his way.

The sights (Figure 3) are in the "Battle Sight" or "down" position, and their alignment is no different from that of the pistol the grenadier will wear as a sidearm. In this position he can slam his high explosive round directly through a doorway, window, pill-box aperture, or into the midst of a group of men from 50 to 80 meters distance in the same manner he would fire any direct fire weapon. For longer range, he presses the rear sight lock, raises the sight and uses the adjustable sight aperture. Major range changes are made by loosening the retainer lock nut, pressing it to the right (plunger fashion), sliding the aperture carrier up or down to the desired range, and then tightening the retainer lock nut. The elevation screw wheel makes minor changes by moving the aperture carrier one mil per click, or four inches at one hundred yards. This feature is very useful when zeroing the launcher. The range scale (Figure 3) is graduated in 25-meter increments from 75 to 375 meters. It is wider at the top than at the bottom to compensate for the distinct drift of the projectile to the right by camming the aperture carrier steadily to the left as the firer increases the range setting.

The windage knob turns the windage screw one-quarter mil per click with the standard rule of clockwise moves right, counter clockwise moves left.

The weapon is zeroed by setting the sights to hit the target at a known range and then moving the elevation scale up or down until the known range graduation rests just above the top edge of the aperture carrier. The one-armed elevation scale lock screw is loosened to accomplish this, then re-tightened.

The firer may use any position which permits him to place his head where he can properly align the sights without difficulty, absorb the recoil, and recover quickly to reload and fire again. The even distribution of the shock to the shoulder through the recoil pad and the hollow "whump" of firing makes the weapon no more difficult to fire than the service rifle. When the range is such that the sights cannot be aligned with the weapon against the shoulder, the firer may resort to the under-arm position where the butt is held between the upper arm and body, or the prone position where the butt is placed on the ground. In any event, the right thumb should be kept on the right side of the weapon to avoid injury by the safety when the weapon recoils.

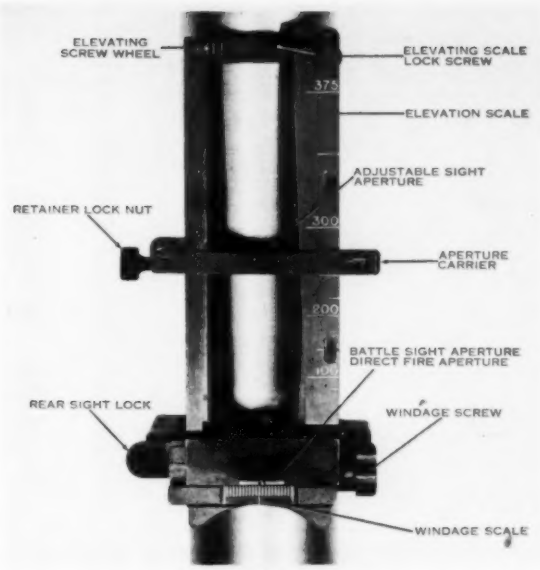


FIGURE 3

Ammunition for the M79 includes the high explosive and practice rounds which employ a high-low propulsion system. A thin-walled brass cup containing mortar-type propellant fits into the high pressure chamber of the aluminum casing. The practice grenade emits a puff of yellow smoke clearly visible at the maximum range and permits easy zeroing of the weapon.

Safety starts with normal protection of ammunition from the elements and special care by the grenadier to protect the ogive and primer. Plastic inserts used in packaging should accompany the ammunition into the universal ammunition pouch for this purpose. If the ogive has been seriously damaged or the projectile appears to have separated from the casing, the round should not be fired.

The practice grenade has a danger radius of 20 meters and the HE requires a training safety radius of 50 meters from unprotected friendly troops. In combat, a safety radius of 31 meters is acceptable. The grenadier must also insure mask clearance since the round becomes armed 14 meters from the muzzle of the launcher.

When one considers the M79's loaded weight of 6.45 pounds, its 400-meter range, its accuracy, and the lethality of its fire, it is apparent that its impact on the capabilities of small units will be considerable. Although the M79 does not have antitank capability, it does extend the Infantryman's throwing-arm capability to fill a dangerous gap, and brings one step closer the days of "hip-pocket artillery" for the doughboy.

Capt Byrom, a DMG from City College of New York, is an instructor with the Small Arms Committee, Weapons Department, USAIS.
Lt Carlton, a 1959 OCS graduate, served as technical assistant for this article and is also an instructor with the Weapons Department, USAIS.

This material is included in Training Circular 23-3, 2 Nov 60, and will be included at a later date in changes to FM 23-30.

This department provides important information on policies and personnel actions which affect your Infantry career. Material for Active Army officers is furnished by Infantry Officers Division, OAD, DCSPER, DA. Information for USAR officers and enlisted Infantrymen is obtained from other Department of the Army agencies.

Civil Schooling and/or Assignment to USMA

AR 350—200 (Training of Military Personnel at Civilian Institutions) and AR 350-205 (Civil Schooling for Army Officers of Armor, Artillery, and Infantry) provide the authority for the post-graduate training of military personnel at civilian institutions at Army expense. AR 614-130 (Selection and Assignment as Academic Instructors to the United States Military Academy) provides authority for application for civil schooling *and* assignment of officers to USMA as instructors in various Academic Departments.

Officers who wish to be considered for selection to Civil Schooling with a subsequent utilization tour in a Branch Immaterial position, should apply under the provisions of AR 350-200 and AR 350-205. Officers who wish to be considered for assignment to USMA as an instructor with civil schooling as a preliminary to this assignment, should apply under the provisions of AR 614-130.

In the event an officer applies for civil schooling under AR 350-200 and AR 350-205 and also expresses the desire to serve as an instructor at USMA, he should indicate his priority of preference in the event he may, at some future time, be considered for both types of assignment. This preference may be expressed in a letter or on the Officers Preference Statement to Infantry Officers Division.

Retention of USAR Officers Beyond Retirement Eligibility Date

During the balance of the current fiscal year (FY 62), and FY 63, a majority of Army Reserve officers who entered active duty during World War II will qualify for retirement or release from active duty under the provisions of paragraph 62, AR 635-130 or Section V, AR 135-173. These regulations implement Title 10, U. S. Code, Section 3911—Retirement with 20 years active Federal service including 10 years commissioned officer service.

A limited number of Reserve officers may be retained on active duty beyond retirement qualification under the provisions of paragraph 11, AR 135-215. The numbers retained are based upon the needs of the active Army for their continued service. Officers may be retained based upon a record of outstanding performance of duty, as critical specialists, or to preserve grade and strength structure within under-strength branches. The latter two categories are subject to annual review and justification of the need for continued retention. The selection of officers for retention beyond retirement is the responsibility of the Department of the Army Active Duty Board. Consideration of all eligible officers is automatic and no recommendations are required. All officers qualifying for retirement in each fiscal year are considered competitively, with the needs of the service in mind. Those selected by the board are notified immediately and are permitted to volunteer for further active duty. Those officers who are not selected for further active duty, are informed of their retirement qualification and mandatory release date by individual letter from The Adjutant General. The action of the board is considered final and re-consideration of individual cases will not be effected. All officers qualifying for retirement during fiscal year 1962 have been notified of their selection for retention or their mandatory release date. Those qualifying during FY 1963 will be notified in the near future.

Numerous requests by, or in behalf of, officers who have been notified of their mandatory release date are received, in which an extension of active duty is desired to permit release to coincide with the end of school terms, the attainment of promotion in the USAR or AUS, or to qualify for an increase of pay based on longevity. No authority exists to permit retention for the reasons indicated.

Retention for limited periods based upon urgent military necessity or when deemed essential to the needs of the service will be considered; however, such requests should be fully documented and submitted only when no other acceptable solution is apparent.

It is recognized that many experienced Reserve officers are being mandatorily released while still capable of performing valuable service to the military establishment; however, retirement and voluntary release from active duty is being utilized to attain au-

thorized strength and to vitalize the long range active duty program for Army Reserve officers.

Voluntary Active Duty Programs

Infantry Officers Division has been receiving many inquiries from officers of the Army Reserve and the Army National Guard as to the possibility of being voluntarily called to active duty, to include 6-month active duty for training (ACDUTRA) officers desiring to convert to a 2-year or indefinite active duty status. In an effort to clarify the picture in this respect, the following is a run-down of the voluntary active duty situation at this time.

Actually, voluntary active duty falls into two categories. The first is governed by a program rather special in nature whereby the Secretary of the Army may order to active duty for a four-year period, and on a voluntary basis, officers of the Army Reserve and Army National Guard to participate in preparing and administering the policies and regulations affecting the Reserve Components of the Army. The keynote here is that the individual enters on active duty for a specific assignment and for a specific tour. This program is governed by AR 135-18, dated 8 July 1960.

The other type of voluntary active duty is of more general interest, being more general in nature, and the one that comes to the minds of most of us when discussing voluntary active duty or recall programs. This is the one that is applicable to the Reserve or National Guard officer who desires to return to general active service, or to enter upon active duty for the first time as a commissioned officer, as well as the 6-month ACDUTRA officer who desires to convert to a 2-year or indefinite active duty status. Such programs are on a Fiscal Year basis, since budgetary and strength limitations are the governing factors. A limited program of this nature for the remainder of FY 61 is currently in effect as outlined in DA Circular 601-6, dated 3 February 1961. However, Infantry was not one of the branches in which call to active duty in this sense is authorized during FY 61.

Things are looking up a little bit for the Infantry in FY 62, however, for DA Circular 601-8 dated 14 April 1961 includes us in—not out. The "little bit" stems from the fact that the FY 62 program is also limited in nature, the salient features being:

- The program applies only to company grade officers.
- Priority will be given to those officers with less than 14 years' active Federal service. This places the Reserve officer with enlisted service as well as commissioned service low in priority if the two periods total 14 or more years.
- Selection will be on a "best qualified" basis.
- Selected applicants with less than 2 years' active Federal commissioned service will be ordered to active duty for a period of 2 years (Signal Corps is 3 years). Thus the ACDUTRA officer ordered to active duty in Infantry must first convert to and serve a 2-year tour before he can enter upon an indefinite category. Individuals with 2 or more years' active Federal commissioned service will be ordered to active duty for an indefinite period (indefinite category).

This is the situation as it stands now. At least FY 62 is better than FY 61.

NEW IOD CHIEF

In August, Brigadier General Harvey J. Jablonsky will assume from Brigadier General Tucker the post as Chief of Infantry Officers Division, the agency which prepares "Career" for us. A 1930 graduate of Washington University of St. Louis and a 1934 graduate of the USMA, he had the distinction of having been captain of the football team at both these institutions. In addition, he has served as an assistant coach at West Point for 10 seasons.

General Jablonsky has described early 1943 as "the most critical period in my military career." At that time he transferred to the Infantry and took jump training at Fort Benning. During World War II, he fought with the 515th Parachute Infantry Regiment. Since then he has served in many key command and staff assignments both in the United States and overseas.

WE NEED YOUR IMMEDIATE ASSISTANCE in securing an early increase of 4000 new subscriptions to *Infantry*, and assistance in keeping the new total as a minimum subscriber level. Any one who can send us ten new subscribers will receive his subscription (new or renewed) free. This offer applies in multiples of ten also, so that units can help the drive. You need not use a subscription form; a letter which provides the same information will suffice.

BLIND, HALT, DESTROY!

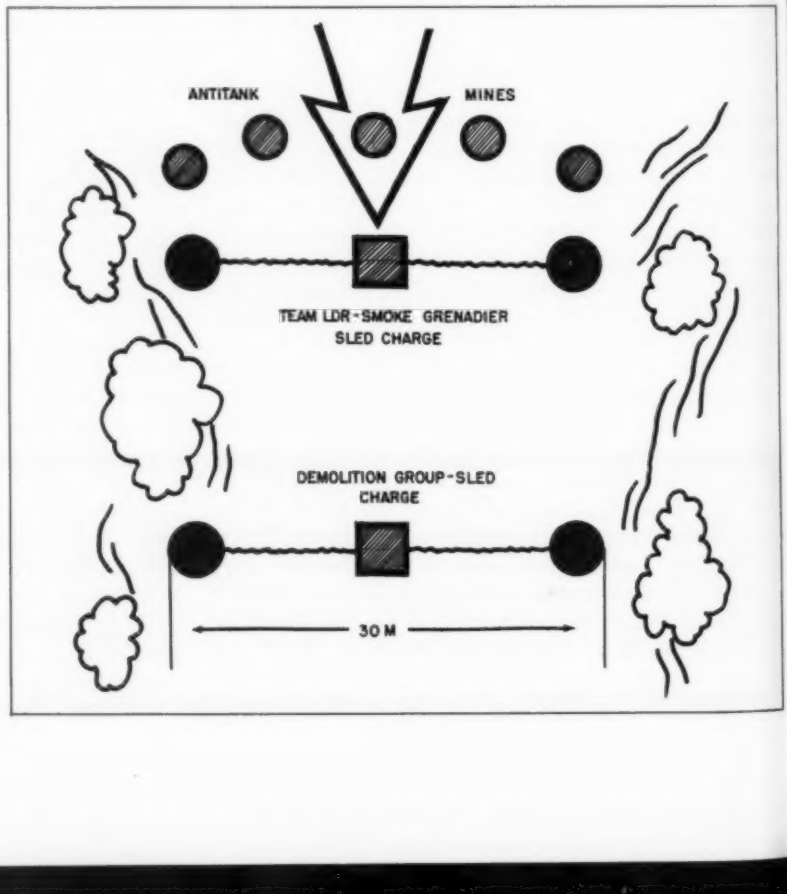
MORE TIPS FOR TANK KILLERS

Capt Donald G. McRae, Inf

On a cold October dawn in 1956, a group of Hungarians met in the beleaguered city of Budapest. There they were issued gasoline bombs by a group of women who were busily manufacturing those lethal items in a small, hastily-set-up factory. An officer of the Honved Army gave the group some last-minute instructions and then dismissed it. Later, the members of the group met once again in the outskirts of the city, and quickly dispersed themselves among the ruins lining the main street which led to the center of Budapest. The early morning fog had not yet lifted from the Danube. Soon, the Soviet armored column would be rumbling down this street toward the city's center in its attempt to put down a revolt that threatened to sweep the entire country. Each day at dusk, the tanks and armored personnel carriers rumbled out of the city to take up posts on the hills overlooking the valley and plain of Pest. Each dawn they returned to renew the battle.

Two members of the group, Mikos and Jozsef, ages 12 and 14, crouched and shivered in the damp chill of their hiding place. But their discomfort did not affect them, as their whole attention was focused sharply on the direction from which the Russians would come. The ground beneath them gave a slight tremor, the first indication of the armored column's approach. Quickly Mikos and Jozsef adjusted the clusters of gasoline bombs beneath their coats. Both of them knew exactly what they were to do. They were already old hands at the business of tank hunting. They were particularly good at this dangerous work, not because the Soviets had any compunction about shooting down children, but rather because their small size and agility enabled them to dash in front of a tank, hurl their gasoline bombs at the area just below the driver's compartment, and jump nimbly out of the way before they, too, were engulfed in the ensuing roar of flame. Snipers, strategically located, would deal with the crew of the tank as they tried to escape.

It was dangerous business, and Soviet tank crews could be excused for being jittery. When they were within the city, they never knew from one minute to the next when the apparently secure, thick-walled steel turret of their tank might turn into a red-hot oven. If they attempted to escape, they would fall victim to a volley of rifle and machinegun fire delivered from windows and doorways of the endless array of buildings surrounding them. Tank crews learned rapidly

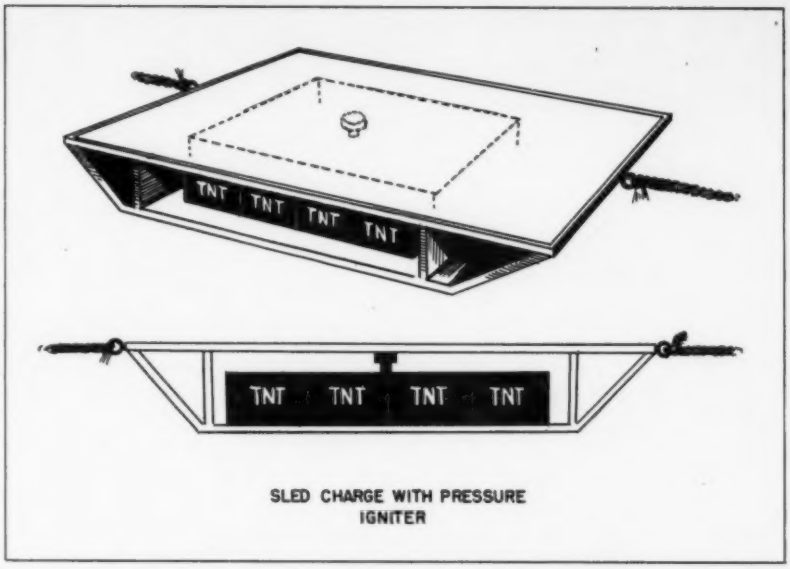


to keep their engines racing and the clutch in when halted, so that they could quickly engage the clutch and leap forward to run down anyone who approached too close. This did not always work, however, for another trick used by the Hungarians on several occasions was to thrust the bared ends of high tension lines against the sides of armored vehicles, electrocuting the occupants. Finally, the situation became so untenable for the Russians at night that the Soviet commander ordered a nightly withdrawal of all his units from the city.

The uprising in Budapest serves to illustrate that even untrained and poorly armed civilians can be more than a match for well-trained armored units who lack Infantry support. Hundreds of desperate but resolute citizens of Budapest made their city a death trap for Soviet tanks, destroying more than 500 armored vehicles and killing more than 5,000 Red Army troops.

Many Arms of the various branches of the Service have developed highly complex and sophisticated weapons systems which in many cases tend to reduce warmaking to a push-button process. The modern Infantryman, while not yet in danger of being replaced by automation, does have many new and intricate weapons and machines to help him fulfill his mission. There is a danger, however, that the Infantryman may become so engrossed in, and dependent upon, these intricate weapons that he cannot function without them. He must be reminded, therefore, that antitank defense may depend upon him alone when there are no antitank weapons available.

The sight and sound of a formation of enemy tanks bearing down upon a rifleman's foxhole will produce in him one of two reactions, depending largely upon his prior training in conjunction with armor. If he has had little or no Infantry-versus-tank training, he will be convinced that to remain in his position would be tantamount to sure death, either from being crushed to death or from his foxhole's caving in and burying him alive. If as a result he abandons his position, he will have done two things the enemy has hoped he would do. First, he will have revealed his squad's defensive area, and secondly, he will have exposed himself to certain death. If, on the other hand, the soldier remains cool-headed and merely crouches a little lower in his foxhole, the most dangerous action possible to a tank passing over his foxhole is to shake a little dirt down the back of his neck.



SLED CHARGE WITH PRESSURE IGNITER

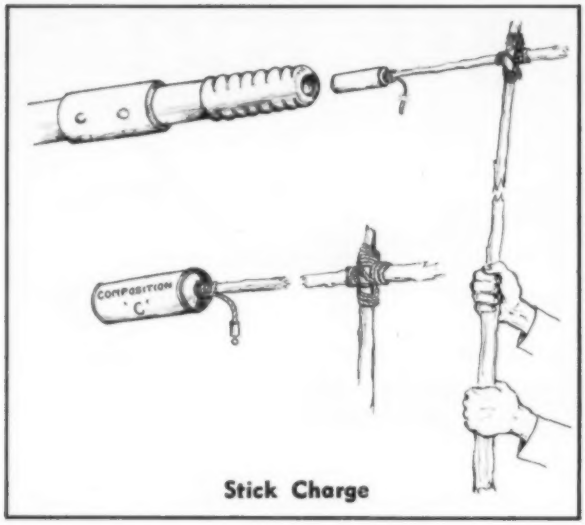
The German High Command in World War II found that when Russian armored attacks were carried out in conjunction with infantry, success in repelling these operations was achieved only when the German infantryman remained in his position and allowed himself to be overrun. Troops who dug themselves in well suffered few casualties, whereas companies that abandoned their positions suffered much greater losses. A directive from higher headquarters stated that troops would remain in position and allow the enemy tanks to go past, regardless of how many were sent against them. All centers of resistance were to be equipped with "Molotov cocktails," demolitions, and, if possible, flame throwers.

It was also realized that German infantrymen had to receive more antitank training to supplement their antitank weapons, which often were incapable of dealing with a large-scale tank-infantry assault. For this reason, the Germans developed the tank-hunter team, based upon the experience of the Finns against the Soviets in the first winter war. Special schools were set up in rear areas to train these teams. There, future tank hunters received training, using captured enemy armor in order to become familiar with specific tank capabilities, limitations, and tactics. When the trained teams returned to their battalions, they became an integral part of their unit's antitank capability. The Germans employed these tank-hunter teams when there were no armor-piercing weapons at hand, or if such weapons proved ineffective.

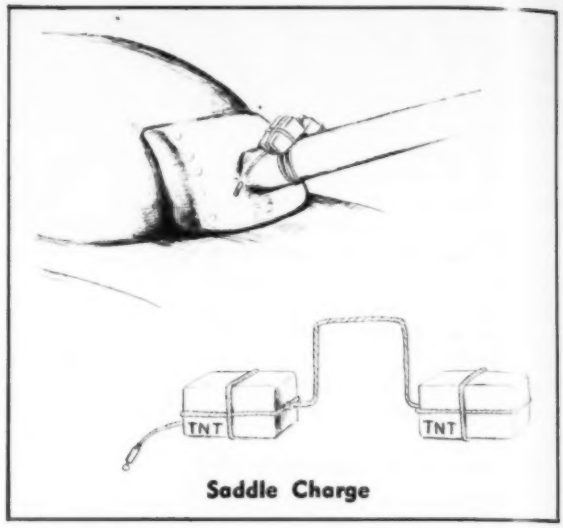
Tank-hunter teams at first consisted of a leader and three men, though later in the war they were expanded to ten men. The equipment used was fairly simple—incendiary bottles, antitank mines, demolitions, automatic weapons, flame throwers, crowbars, hatchets, and camouflage material.

The first operational principle of the tank-hunter teams was to separate the tanks from the infantry. This was supposed to be accomplished by the main defensive line's bringing all available fire to bear upon the tank.

The second operational principle



Stick Charge



Saddle Charge

was to blind, halt, and destroy the enemy's tanks. A tank-hunter team attacked only one tank at a time, usually the one that presented the most immediate threat to the main defenses of the unit. The tank-hunter team dug itself in several hundred meters in front of the main defensive line. Their foxholes were deep, narrow, and without parapets. The team's four foxholes formed the corners of an area 30 meters square. The leader and one team member occupied the first two positions nearest the enemy, and acted as the covering and smoke detail. The other two members formed the demolition detail. Antitank mines were placed in front of the area. Both details employed sled or ski charges which could be pulled laterally into the path of a tank, and which were quite capable of destroying the largest tank. Careful attention was given to the positioning of a tank-hunter team. Various ruses, such as dummy mine fields and mine warning signs, were used in an attempt to lure tanks onto terrain unfavorable for them but advantageous to the tank hunters.

The first step in the *modus operandi* of the team was to *blind the tank* singled out for attack. Taking advantage of the "dead space" of the tank (that area surrounding a tank that it cannot cover with its own weapons—usually 10 meters for the machineguns and 20 meters for the cannon), the smoke detail placed a smoke grenade on the front of the tank near the vision slits. At night, an illuminating flare was used, the brightness of which completely dazzled the driver and tank commander. If enemy fire was not too intense, one tank hunter would leap onto the moving tank, cover the vision slits with grease or mud, and cover the periscope with a coat or piece of cloth. Being unable to see, the tank commander would halt or slow down.

The next step was to *halt the tank* permanently. This was done by pulling a ski charge under the tank's track, or by jamming a crowbar or small log between the track and sprocket wheel. Small pole charges or bangalore torpedoes were often thrust into the suspension system or between the road wheels and detonated. German tank hunters were also trained to throw antitank mines, armed with a fuse and pull-igniter, from a foxhole onto the back of a moving tank. This was done with a discus-like toss which required much practice, strength, and daring on the part of the thrower, who had to be close to the tank, and who was generally under heavy fire at the time. The resulting explosion of an antitank mine on the tank was usually enough in itself to destroy both tank and crew; at the very least, the crew would be stunned by the unbearable concussion.

The final step of the tank-hunter team was to *destroy the tank*. Once it was blinded and halted, the tank was quickly and efficiently destroyed. The team leader and the smoke grenadier protected the operation of the demolition team with automatic weapons, pinning down any enemy infantry nearby and, at the same time, preventing the tank crew's escape.

Even though the tank was unable to move, its weapon still presented a very potent threat. In order to remove the tank's sting, its weapons had to be rendered useless. A few blows from a crowbar were usually enough to bend a machinegun barrel sufficiently out of true alignment to destroy it if it was fired. A hand grenade slipped down the tube of a gun blew it in half or split it, making it useless for further firing. With the advent of longer gun tubes and muzzle brakes, a new method was devised. A stick about four feet long had a charge of TNT affixed to one end. The other end was secured to a longer stick, the whole device then resembling an upside-down L. This arrangement enabled a tank hunter to insert the charge through the muzzle brake

Capt McRae, a 1944 OCS graduate, attended the Parachute School in 1942 and subsequently the Army Language School. He has completed the Foreign Area Specialist Training Program in the Russian area and was recently graduated from the Career Course.

and into the tube itself. When the charge was detonated, the barrel of the gun was usually blown off. The breech block, if closed, was so jammed by the explosion that it could not be forced open. If there was a round already in the chamber, any attempt at further destruction was unnecessary.

Another method of destroying the main gun was to use a saddle charge. A saddle charge was easily enough manufactured, and consisted of two blocks of TNT joined by a short length of cord. The charge was either hung over the gun barrel near its juncture with the turret, or it was wrapped around the barrel once or twice to secure it. Both charges had to be touching the barrel and each other.

Once the tank's weapons were destroyed, the tank itself was put out of action. A land mine or a slab charge of TNT was placed over the driver's compartment or on top of the turret. Although the explosion probably would not crack the armor at these points, the inner surface of the plate would spatter off, killing or wounding the occupants. A land mine or charge placed under the turret near its junction with the hull would either blow the turret completely off, or jam it so that it could not be turned.

The American Infantryman belongs to one of the best equipped and most highly mechanized armies in the world today. Tasks in war that were once accomplished by the individual soldier's strength, stamina and native inventiveness, are now performed by machines. But machines at best are still only machines, subject to breakdown and failure. Infantry commanders must never lose sight of the fact that in some future war, defense against the enemy's mechanized might may well depend upon the ingenuity of a few foot soldiers, equipped with only their basic weapons and enough imagination to make good use of field expedients. More emphasis should be placed upon giving the Infantryman training that will not only instill in him confidence and knowledge that he can survive an armored onslaught, but also will convince him that, even without antitank weapons, he is still more than a match for any enemy tank.

Into the Enemy's Trap—an editorial

Operational Readiness: There's a term about which we have heard much for the past several years. All thinking commanders subscribe to it. All staff officers subscribe to it. Even the public says we should have it. And we should. But what is happening to the term? What is happening to us?

We are involved in an era which has been variously termed "cold war" or "a protracted ideological conflict." It has been "protracted" now for a long time, and it would appear that *some individuals* are beginning to be complacent, always being "ready around the clock." Concern in some instances is giving away to boredom, and boredom to apathy. Except for sporadic jarrings back to reality, those people feel that the threat against our existence is fading slowly away. They are falling right smack into the enemy's trap!

Depending on your point of view at the particular moment, there is a built-in human mechanism which is unfortunate. This is the comforting but misleading device which allows you to feel clearly "It can't happen to me." Have you ever had that feeling when you finally decided to pass a slow truck on a crowded highway? Or toyed with your TV set without disconnecting the cord? Or cleaned a gun which "surely" was unloaded?

Now take a look at yourself and see whether the "it can't happen here" salve has let you forget that you might be 10,000 miles away from home next week, climbing hills or tromping through a jungle shooting at people who intend to kill you. It can't happen? Just ten years ago it happened to countless Americans, some who regularly wore uniforms, and many more who hastily were thrust into field gear. Remember the anguish of those frustrated, serious, soft, and extremely unready individuals who were summarily hustled onto Korea's steep slopes and muddy rice fields? It couldn't happen to them either.

Still not convinced? Remember this, then, on the day *after* the next starts. First remember what happened in 1950. Then watch the run on the sugar and flour at the commissary, on water jugs and footlockers at the PX, on uniforms at the QM Sales Store, on allotment forms at the Finance Office, and on new wills or powers of attorney at the SJA's office. Sorry, but there won't be enough to go around right now, and a little more time is one thing you won't have. It'll be too late, but you just remember what you said to yourself yesterday.

Are you in fact ready? How about the paunch that would stop you in the middle of the first hill? Can you keep up with the healthy eighteen year olds? Are you ready to tangle with a rough, tough enemy? If not, *who* is going to do the "in fighting," and what will your part be? How about that last will and testament you're going to up-date tomorrow? Is your insurance adequate for your family? And how about that allotment for your family in case you suddenly drop out of the picture? Do it tomorrow? Sure, go on back to the TV show! It can't happen to *you*.

Bah Bah Black Sheep

INFANTRY FORUM

Capt Manfred Kelman, Inf

TODAY, the 4.2-inch mortar is the black sheep of the Infantry arsenal. It is not a new role for the 4.2, however, for although it is recognized as a versatile, powerful support weapon, it has been a true stepchild ever since it was adopted by the United States Army.

This adoption came about when our Government purchased the patent for the Stokes mortar, a smooth-bore, muzzle-loading weapon, designed to fire a tumbling projectile which had an allways fuse.

In order to increase the range of the weapon, and to gain greater accuracy, it was decided to try a rifled barrel and a true-flight projectile. Thus, the smooth, 4-inch Stokes mortar barrel became the rifled, 4.2-inch mortar barrel. Further research was conducted to alter the design for more practical field use. By 1940, the 4.2-inch mortar, M1A1, was the standard weapon used by the Chemical Corps. It was designed for quick surface emplacement in order to deliver rapid-fire smoke or gas missions at ranges from 600 to 2400 yards. It was accurate and had an extremely high rate of fire which made it a highly desirable support weapon for the Infantry. The only limitation was the lack of range, and for this reason, research was continued. Finally, in 1943, the M2 version of the 4.2 mortar was standardized. This model provided mechanical adequacy for use at ranges up to 4400 yards. For the remainder of World War II this weapon was used effectively on all fronts as a Chemical Corps weapon.

In 1946, a conference was held at the Infantry School and a reorganization of the Table of Organization and Equipment of the Infantry regiment was recommended by the participants. One of the recommended changes was to include one heavy mortar company in each Infantry regiment. This change was approved and each regiment received the heavy mortar company, consisting of three firing platoons of four mortars each for a total of twelve tubes. Further, each airborne regiment received two platoons of four mortars each. Now the 4.2 mortar was used by both the Chemical Corps and the Infantry.

When the Korean conflict broke out, the 4.2 mortar again proved to be an effective weapon. Re-

search and development continued to improve the design of the weapon, and in late 1952, twenty of the new mortars were sent to Korea for observations and testing. The command reports for the period October to December 1952 listed every observed deficiency of the weapon. The biggest discrepancy was that the metal had a tendency to crack or break in cold weather. This was brought to the attention of the Ordnance Corps and the situation remedied. Today, all parts of the 4.2 mortar, M30, which support the barrel are made of such material that it is almost impossible for any part of the weapon to crack or break under normal conditions. The barrel can be traversed 6400 mils without changing the baseplate position, and ranges up to 5423 meters can be obtained.

As mentioned before, the Chemical Corps and the Infantry both used the 4.2-inch mortar following World War II. This was changed in January 1953 when the only active Chemical mortar battalion was converted to an Infantry battalion (heavy mortar) and Infantry became the controlling branch.

Infantry retained control only until 1956. During this time, some training problems arose. For instance, it was difficult to find qualified officers and enlisted specialists, such as survey and fire direction personnel, for the heavy mortar companies. Fire control methods and equipment closely resembled the artillery. It did not come as a shock, therefore, when in 1956 the heavy mortar company was made into the mortar battery, and the 4.2-inch mortar was now considered an Artillery weapon. While the mortar was under Artillery control, the existing fire control methods and instruments were used.

In 1959, however, the mortar was returned to the Infantry. Presently we find six tubes in the mortar platoon of the combat support company of the Infantry Division battle group. Yes, now the stepchild is back in the Infantry where it belongs. But, it seems that we, the Infantry, haven't learned our lesson. Instead of using the 4.2-inch mortar strictly as an Infantry weapon, we try to make "Junior Redlegs" out of the mortar platoon. First, we want to use surveyed data in fire control. We admit that with the four-man survey team in the mortar platoon, we do not have sufficient personnel to perform this survey. But, the Artillery battalion in direct support of the battle group is supposed to run a survey leg to within 1000 meters of the mortar position. By the time the Artillery survey team has come that close to our mortar positions, we should be displacing. Moreover, in future conflicts we can expect countermortar fires within three minutes after our initial round has been fired. This means that we must displace our mortars more often and more quickly than ever before. Under these conditions, the surveying of the firing positions will be extremely difficult, if not impossible.

A second mistake we are guilty of is using the Range Deflection Protractor as the primary fire control instrument in conjunction with a map or a grid sheet as the primary firing chart, while using the M16 plotting board with the coordinate system as the alternate firing chart. Why is it not the other way around? Well, an answer frequently given is "to gain some accuracy." This may be true, but let us not forget that a mortar is not a pinpoint weapon, but is designed to cover an area target. Further, with our present fire control methods, we lose some of the well-known flexibility of the Infantryman. We have to provide some type of cover for the fire direction center, either in a trailer or a tent, to protect the firing chart from the elements. We must also burden ourselves with plotting tables, grid sheets and plotting pins, tape, target grids and other items when in reality all we need is the M16 plotting board and a graphical firing table. With these two instruments, fire direction center personnel can climb into a foxhole and, under a poncho if necessary, obtain firing data which will give effective fire support. This would also ease the problem of crosstraining, since the 81mm mortar section already uses the M16 plotting board. Further, we are dreaming when we think of precision registrations, the use of weather data, and even surveyed observation posts. These methods are for the Artillery with its extremely accurate, long-range weapons. They are not for us, the Infantry, with the 4.2-inch mortar.

The secret of the 4.2 mortar is its tremendous volume of fire delivered at an area target. The rate of fire of this mortar for the first two minutes is twenty rounds per minute, meaning that a mortar platoon can deliver 240 rounds into an area approximately 300 meters wide in two minutes. After this time, the rate of fire drops to five rounds per minute for each tube, or thirty rounds per platoon, for twenty minutes. Considering the inherent dispersion of the weapon and the bursting area of the HE round, which is forty meters wide by fifteen meters deep, we can see that an area target can be effectively covered without precision registrations or other Artillery methods.

Yes, the "stepchild" has come back to the Infantry. Now it is up to the Infantry to use this weapon effectively in order to make it a full-fledged member of our family of weapons. Let us employ the 4.2-inch mortar strictly as an Infantry weapon and forget about making it the battle group commander's personal artillery. Let the 4.2-inch mortar platoon use the same fire control methods as the 81mm mortar section and call this platoon the battle group commander's personal Infantry "Sunday punch."

Capt Kelman was commissioned from OCS in 1953. A 1961 Career Course graduate, he has served as a platoon leader in a heavy mortar company and on the Mortar Committee, USAIS. He is now with the 2d Inf Div, Fort Benning.

The opinions expressed in this article are those of the author and do not necessarily reflect thinking of DA or USAIS.—Editor.

THE CZECHOSLOVAK ARMY

Capt O. Preston Chaney Jr, Inf

Photos from *Ceskoslovensky Vojak*

Czechoslovakia, the second nation in the world to declare itself a "Socialist Republic," is regarded today as a model satellite, one which Khrushchev has held up as an example for other countries of the Soviet Colonial Empire to emulate.

Czechoslovakia contributes not only ideologically to the Communist cause, but militarily as well. As a member of the Warsaw Pact, this nation of less than fourteen million can mobilize a million men in a few months' time, and is capable of furnishing two million soldiers in an all-out mobilization.

The present strength of the army, which is composed of both ground and air forces, is less than 175,000. In addition, there are militarized Frontier and Interior Guards which could add 40,000 to 50,000 men to the ground forces should this become necessary. The Frontier Guards receive training comparable to Infantry troops, while the Interior Guards are trained for special missions.

Each year 60,000 to 65,000 men are inducted into the army to serve a two-year term. Before assignment, the political reliability of each recruit is carefully determined and those whose loyalty is questionable find themselves allocated to labor battalions or other nonsensitive units. Upon release, army men are placed in the reserve where they remain until age sixty.

For purposes of military-territorial administration, Czechoslovakia is divided into two military districts. The Western District, with headquarters in Prague, controls the areas adjacent to its non-Communist neighbors, Austria and West Germany, and commands most of the better-prepared tactical units in the army. The Eastern District headquarters is at Trencin.

Military district headquarters are in the line of command between the Ministry of National Defense and the line units, but are not tactical headquarters as such. They are responsible for the combat readiness of the troops in their areas of responsibility and participate in the troop training program. The district headquarters also have the responsibility for the administrative and logistical support of the units in their respective areas.

There are no tactical headquarters above division level in the Czechoslovak army. In wartime, the district headquarters would provide cadres for higher headquarters to control combat operations, although, at the same time, they would continue to function in their primary administrative role.

Capt Chaney was commissioned at Davidson College in 1953. He is an Advance Course graduate and has completed the Army's Foreign Area Specialist Training Program in the Russian area. Capt Chaney has served with the U.S. Military Liaison Mission to the Soviet Commander in East Germany and is presently assigned to the Office of the Assistant Chief of Staff for Intelligence, DA.

Penetrating a wire obstacle during a winter exercise.

Parachute troops in a night training exercise.

Border guard on duty along the Czechoslovak - West German frontier.

Individual mobility.

Infantrymen advance utilizing a T-34 tank.

Stream-crossing techniques include engineer-constructed rafts and bridges.

The Czechoslovak Army (continued)

An infantry instructor conducts trainees through an attack exercise.

The Soviet-manufactured 7.62mm machinegun is a standard infantry weapon.

Infantrymen train on the 120mm regimental mortar.

A 100mm assault gun (above) and an infantry squad (left) practice stream-crossing techniques.

Basic combat arms include infantry, armor, artillery, and engineer troops. Wartime organization would probably be three or four motorized rifle divisions or three or four tank divisions grouped to form an army. This organization may sometimes vary, with tank and infantry divisions forming combined-arms groups for special operations. At the present time, all divisions throughout the Soviet Empire retain the "triangular concept." For some time now, the divisions have been undergoing a modernization program which includes the receipt of more modern weapons and the "motorization" of rifle divisions. The remaining army strength is divided into combat and support units ranging in size from company to brigade. They include separate airborne, artillery, engineer, and signal brigades and regiments.

Czechoslovak troops are well-equipped (as the accompanying photographs will reveal), and training is long and intense. Discipline is good in this army, which is honeycombed with Communist Party functionaries overseeing the activities of the officers and men. An additional watchful eye over the loyalty of the Czech military forces is maintained in the form of small Soviet liaison staffs scattered throughout the country, as well as numerous Soviet representatives in service schools and headquarters.

The Soviet Union supplies the Czechoslovaks with a great deal of equipment, although Czechoslovakia, well-known for its armaments industry, does produce many of its own weapons and vehicles. In fact, many Czech weapons have been supplied to other nations, including the United Arab Republic. Most of the weapons designed in Czechslovakia are of the same caliber as comparable Soviet weapons, a definite advantage to them in any future struggle. Infantry small arms are of domestic design and manufacture, except for the Soviet-type heavy machine-

Czech infantry advances using a tracked amphibian supported by engineers.

guns. Antitank weapons, mortars, antiaircraft guns, and artillery weapons, including a 130mm field rocket launcher, are manufactured by Czechoslovakia.

Besides having the highest arms production capacity of any satellite state, Czechoslovakia also is the largest producer of trucks and automobiles within the Communist empire. Military trucks, including the multiwheel-drive 5½, 7½, and 11-ton varieties, and the Soviet T-54 tank are locally manufactured under such world-famous names as Skoda, Tatra, and Praga.

Czechoslovak paratroopers recover equipment (above). Breaching of obstacles is stressed during individual training (right).

PROVEN — The Opposing Forces Test

Maj William R. Ellis

In the October-November issue of *Infantry* there was an article which described in theory an opposing forces test. This fine article detailed the time scheduling and usage of a single piece of terrain to test two like units simultaneously. My article describes such a test as it was conducted, establishing both the feasibility and desirability of this arrangement.

My example concerns the 2d Armored Division (note that I am Infantry) which, at that time, was under considerable pressure to complete its Army Training Test in a relatively short span of time, and with relatively limited training areas. The decision was made to test like units, two at a time, from platoon level through battalion level. In turn, one of the two units became the Aggressor, using appropriate uniforms and insignia, and the other unit was designated the NATO unit without change in status. This precluded the need for nine *extra* Aggressor details which would otherwise have been drawn from units not participating in the test, a saving which was appreciated by everybody. It also saved considerable ammunition which would have been fired by the extra details in addition to that normally expended by tested units.

A week before the test for any two battalions, an armored rifle battalion and a tank battalion traded two companies with each other, thus permitting two opposing balanced forces. This transfer would not be necessary within pure Infantry units, and would obviate the one possibly unbalancing factor of two like forces having in one instance an Infantry staff and commander and in the other instance an Armor staff and commander.

In order to secure a tactical advantage during the test, battalion commanders discovered that they had to make maximum efficient use of their supporting weapons, tactical savvy, and terrain. Parts of the test allowed for free maneuver, during which time one battalion could — and often did — dominate the other. To those participants who were uninitiated, it came as a surprise to learn that an armored unit can hit like a heavyweight during hours of darkness. The most interesting psychological aspect of the test was the fact that the "friendly" commander was not virtually assured of winning his war. In fact, complacency often typical of one-sided tests was almost a sure omen of "losing" the war.

A combat command headquarters was established as test control headquarters, with its normal commander as Chief Controller. Some of the staff members were those from Division G2 and G3 who had assisted in preparing the test, thus materially assisting in proper administration of the test. Two separate operation centers were established so that each tested battalion had its own "higher headquarters" to which it could report and from which it could receive necessary tactical instructions. Four sets of communication were used (a luxury perhaps not so readily developed in an Infantry unit) for control headquarters to talk with umpires on both sides as well as to both commanders. Equally important was a provision whereby umpires of one side could communicate directly with their counterparts on the other side. For logistical play, Division established two identical supply points, one behind each tested unit.

After a blackout march into an assembly area, each battalion commander, at different times, received the general and special situations and his orders. (Initially, one battalion defended and the other attacked). Thereafter, only one liaison officer from each battalion was permitted to visit and function at his higher headquarters.

Air support by the Aviation Company was available on request, but no missions were flown beforehand or without request. This insured coverage available within the limitations of current weather conditions and within the desires of the commanders.

As an added refinement, communication security violations were pointed out to players and controllers alike by presenting to pertinent commanders a tape recording and typed record of all of their battalion transmissions during the test. This was an eye-opener to many of us when we could hear, outside of the hassle of "war," what we had said under pressure and when we might have thought time was far more important than rules.

Results of the test greatly exceeded expectations. Some of these are worth isolating and mentioning.

- The testing time was reduced by one-half.
- Training areas were used to maximum advantage in terms of both time and space.
- There was a tremendous saving in umpire personnel, a bugaboo which confronts every commander who engages in testing. It required only three more umpires to control two battalions than it had required for one battalion before.
- The training aid—Aggressor—was not drawn from units which received no credit and which had other duties to perform.
- An estimated $25,000 was saved in ammunition because there were no non-tested units required to use it.
- Much greater realism was injected than is possible in canned Aggressor reaction play. Intelligence play, for example, was made by proper agencies against full-size "Aggressor" rather than thinly-scattered elements of a phony force. This stimulated, again as only one example, a much better degree of camouflage and security than is customary in one-sided tests.
- Last, but far from least, commanders and staffs were compelled to employ their maximum initiative and leadership or to suffer an ignominious "defeat" (and possibly failure of the test).

Partly as a result of this test, and partly because the test makes good sense even on paper, Seventh Army has encouraged all units to attempt this system in their training testing. Many have already, and in time all probably will.

MAJ ELLIS was commissioned in France in 1945. He has served with four Infantry divisions and one Armored division, and on the faculty of the Air Defense School. From 1954 to 1958 he served with the 2d Armored Division in Germany, where he gathered the material for this article. Major Ellis is now on ROTC duty at Oklahoma State University.

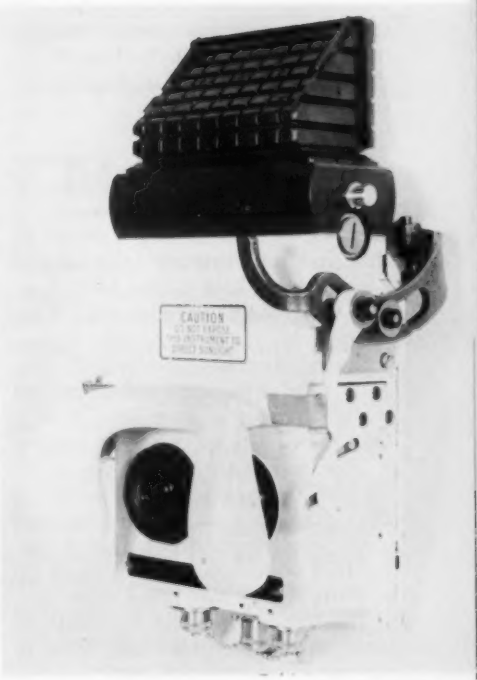
THE M19 PERISCOPE

SFC Melvin L. Sparks

MOVEMENT of track vehicles under concealment of darkness is not as difficult as you may imagine. The M59 and M113 Armored Personnel Carriers and the M41 Tank have, as a component, an infra-red system—the M19 Infra-Red Periscope.

Driving with the infra-red system offers a challenge both to the driver and to the track commander. The periscope emits a greenish illumination instead of actual colors. Atmospheric conditions such as rain and fog have the same effects as with a conventional light beam. The driver's depth perception will be hampered until experience and judgment offset the difficulty encountered in judging depressions and obstacles. Drivers must also become accustomed to a rather limited horizontal field of view (26.8 degrees), although the scope can rotate a full 360 degrees. Storage space for the M19 periscope is provided within the vehicle itself; however, if it is stored elsewhere, a cool, dark, dry place is required.

Adjustments and repairs of the M19 are authorized only at third echelon level. Regular cleaning is required, however. In cleaning the M19 periscope, you should use only prescribed materials (lens soap, tissue and camel-hair brush). Unpainted surfaces should be lightly lubricated and free of rust and dirt. It should be emphasized that the headrest assembly must be cleaned only with warm water and mild soap, not with solvent or gasoline. Direct sunlight or bright incandescent light will deteriorate the infra-red-sensitive coating, so the lens and prisms must be covered whenever the M19 periscope is taken into the sunlight. With proper handling and maintenance, the M19 can provide your track vehicles with effective night vision.



TROOP LEADING STEPS WORK

Lt Jerry L. Sellentin, Inf

The company commander had just finished issuing his attack order, and he followed it with his usual "Are there any questions?" Regrettably I had none.

This was my first field training problem after joining my unit. I knew (as I had just completed IOOC) that the Captain's order was complete, concise, and simple —all the ingredients of a good order. Yet, in my mind I faltered. I didn't know where to start with the information I had. I tried to recall my classrooom work in Troop Leading Procedures, and I hurriedly read my Fort Benning card on Troop Leading Steps. Decision-making in the relative comfort of an academic environment, I realized, was far different from the reality of doing it for my commander and the 40 men who were now depending on me. All new platoon leaders have experienced the same agonizing uneasiness. Perhaps my experience can help. Use of the Benning card along with step-by-step narrative will help you to follow my thoughts better.

BEGIN PLANNING. Planning what? The overriding necessity *right now* is to apportion your time between *right now and H-hour*, so that your subordinate leaders will have *at least half* of that total time for their own preparation. This means you must first plan where you are going, how long it will take you, what you want other people to be doing, and how long it will take them. The crux of the matter is time and space. When you have figured these things out, select a time and place at which you will issue *your* attack order. Never forget that your subordinates must be as thorough as you, if not more so.

There is one important consideration you must remember. This is *not* the time to decide on a course of action, for you haven't learned nearly enough about what faces you. However, you may begin a tentative plan which can be either proven or disproven by facts you obtain later. This is important, because any time you can save adds up to more and better planning by subordinate leaders, and this means fewer casualties.

The card next says to *Begin Your Estimate of the Situation.* This is good, but while you're pondering the details of the situation what are your troops doing? If you have lots of time, and if your troops can afford to be resting (if that's what they're doing), fine. Go ahead and make your estimate and devise a preliminary plan as mentioned above. If your unit is moving, you had better make a quick plan without benefit of formalities, and know where you want the platoon to be and when, and *then* send somebody to let them know. Now back up and take the time you need to prepare your estimate of the situation, using your map, a photo, or the view from where you are. You may notice that the estimate and the beginning of the plan proceed pretty much together, although for discussion purposes they are separated.

ARRANGE FOR MOVEMENT OF UNIT, RECONNAISSANCE, AND COORDINATION. If you have already taken care of moving your unit, fine. If not, you should be able to know now exactly where you want the platoon to be at a certain time, and your platoon sergeant can stay with the platoon and move it. You should also know when and where you want to meet your squad leaders. You should know this because you have already made an estimate of the situation, and because you know what you want to see on the ground. If the other platoon leaders are still in the area, check to see what their tentative plans are. Remember, however, that they are no more certain of their plans now than you are, and you will want to see them again at some mutually agreeable

Lt Sellentin received his commission from the University of Nebraska in 1959. A graduate of the Airborne Course, he is presently serving at Fort Benning as a platoon leader with Co A, 2d Battle Group, 1st Infantry (OVUREP), 2d Infantry Division.

time to make the final tie-in. This should be done before you issue your order so that your squad leaders *know* what the adjacent squads will be doing.

Now MAKE YOUR RECONNAISSANCE. If you have planned your route well, you should be able to see all you need to, "touching base" once more with at least one adjacent platoon leader for his firmer plans while en route. If you happen to start from the middle of your sector, there will be some doubling back in order to do all you want. But remember, you should see everything out front which could affect your mission. It is during this reconnaissance that you will reject, alter, augment, or adopt the portions of your *tentative* plan. Maps and photos sometimes fail to show the whole picture, and what you miss will not be merely an adverse comment on a grade sheet—it may spell the difference between success and failure, or the difference in men's lives.

COMPLETE YOUR PLAN. Make notes rather than trust your memory. Make them in a sequence which will permit you to form them into a logical, simple, and concise verbal order. You received such an order. Why not give your subordinates as much as or more than you received!

Where did you plan to meet your subordinates? Did you select from the map a place which could overlook most, if not all, of your sector? If so, you should be there on time. If your reconnaissance showed you a better place, have you sent a message to your platoon sergeant so that the leaders will be at the new place? There's no sense waiting until the appointed time to send for them, for there is normally too little time to have it wasted.

Now that everybody has assembled, ISSUE THE ORDER. You should have the answer to any pertinent question that might be raised. If it is really important, you should have answered it in giving the order.

Last, but equally as important as anything so far, is SUPERVISION, the *ultimate* job of any leader. Insure that your subordinates understand what you want. See that they point their activities toward successfully carrying out that mission. When the fighting starts, check to make sure that they carry it out, never forgetting, however, that the estimate of the situation may require more PLANNING, more ARRANGING FOR MOVEMENT, more RECONNAISSANCE, and more SUPERVISION.

Troop Leading Steps practiced in the field will assist you in making maximum use of available time, and the execution of your mission will spell SUCCESS for you and your men.

- **Begin Planning**
- **Arrange for Movement of Unit, Reconnaissance, Coordination**
- **Make Your Reconnaissance**
- **Complete Your Plan**
- **Issue the Order**
- **Supervise**

Who Says You Can't Write for Infantry?

The Assistant Commandant of the Infantry School recently has received several letters from our senior Infantry commanders. One point, among a host of ideas offered by these commanders, stands out as requiring a little clarification by us *now*.

It seems that there are a lot of potential writers—"idea men," we once called them—who are reluctant to write for us because they aren't sure of their grammar or other "rules of rhetoric." It seems also that more often than not some of these idea men cannot find a typewriter, or that if they can find one they don't know how to use it.

We need none of this!

Here is what we *do* need. First, and by all means most important, we need an idea from you. Second, we must be able to read what you send, meaning only that it must be decipherable. We have published several articles which came to us on lined yellow paper, written in Number 2 pencil. Third, we need only be able to see the point of your remarks, which need not resemble the smooth-flowing, graceful rhetoric of a Hemingway or Churchill. We can't write that way either, but we *can* take your idea, sprinkle it with commas, maybe change a word or two, and convert it to fairly readable English. The beauty is that nobody except you and we will ever know that you weren't the near-Churchill who wrote those enchanting phrases. And we guarantee two things: we won't tell anybody, and we will still send you the check.

You can write for Infantry if you can find an idea, a piece of paper, a pencil, and two stamps and envelopes.

OFFICER CANDIDATE TRAINING

Potential leaders must be in superb physical condition (above) and be master craftsmen in the soldier's arts (below).

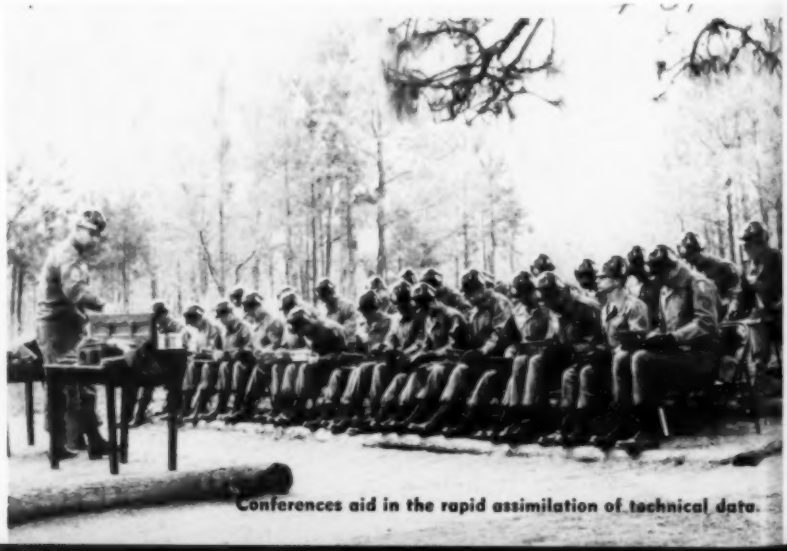
The question "What am I doing here?" enters the mind of the Officer Candidate when he first reports to OCS, and recurs for several weeks thereafter. During the course, he is regimented and disciplined to what seems to him an unbearable degree. He is pushed physically and mentally to the point of perfection, for nothing short of perfection is accepted at OCS.

For 23 weeks Candidates are given intensive training in leadership, weapons, tactics, map reading, communications, physical conditioning, and other military skills. They fill various positions in the student chain of command from squad leader to company commander. It is not unusual to observe Candidates reading their FM 22-5 during ten-minute breaks, for they must excel in drill and command.

After 18 weeks of strenuous effort, Candidates achieve "senior status," and their goal is in sight. The course has been demanding. Some have fallen by the wayside. Survival and success belong to the fit and the determined.

Toward the end there is a difference in the men. They are leaner, walk taller, and there is an air of confidence about them.

When the day of graduation arrives, every new Second Lieutenant can say with the confidence which comes from knowing his job, "Follow Me!"



Conferences aid in the rapid assimilation of technical data.

Practical work in the field adds realism to training.

Individual counseling by platoon Tactical Officers aids greatly in molding young leaders.

Candidates prefer to leave dust and dirt from the reservation outside their rooms.

Use no more than 4 inches of that chair, Candidate!

Social amenities are emphasized during the course.

Graduation—We've made it!

AN INFANTRYMAN

Lt Col Sidney B. Berry Jr, Inf

SOMETIMES I wonder why anybody stays in the Infantry any longer than it takes him to get out of it. Any birdbrain knows that the doughfoot leads the dirtiest life in Uncle Sam's Army.

But I'm a poor one to talk. Two wars, three Purple Hearts, and twenty years, and I still don't know any better. If one war as a rifle platoon sergeant didn't pound some sense into my head, there's absolutely no excuse for not having learned in another war. But I still wear the crossed rifles, and know damned well that I'll never wear anything else. The Infantry sort of gets in your blood, I guess.

I don't really know what makes a man an Infantryman. Sometimes I think I do, but I've never been able to put it into words. And I've heard many other people, all the way from five stars down to no stripes at all, try to explain it, but I'm still not quite sure what it is.

Everytime that I get to thinking this way—which is pretty often—I remember a young man named Pete. I think that he could explain very well what it is that makes a man an Infantryman. That is, if he were still alive. Regrettably, he is buried somewhere in Korea.

* * *

Pete joined Able Company in August of 1950 in the Pusan perimeter. The company, down to 80 men, was holding a hill commanding the Chinju-Masan road, a hill that the North Koreans wanted badly enough to lose a lot of men over. We screamed for replacements to fill our foxholes, but what did we get? We got a bunch of men "parolled" from the Eighth Army Stockade and stripped from service units in Japan. And we got Pete. I figured for sure we were really down to the bottom of the barrel. He was a scrawny little Mexican kid who claimed to be 18 but looked 14, and who spoke English with a heavy accent. He was the most unlikely candidate I'd ever seen for an Infantryman. And what's more, he wanted no part of the Infantry. He'd spent a couple of years with tanks and wanted to get back with them. That put him right at the head of my list. After squaring the young punk away, I gave him to the Third Platoon Sergeant, Clapp, a good man for breaking in young soldiers.

For the next few weeks I lost track of Pete, because the Com-

mies began their Pusan-or-Bust push, and we were busy seeing that they busted. By the end of the month we had broken out of the perimeter and were at Chinju, where our battalion, with some division tanks, formed a task force that took off like a scalded dog for the west coast of Korea. For four days and three nights we really romped, overrunning artillery, supply dumps, motor parks, headquarters, and everything else the North Koreans had in their rear. It reminded me of the old days with Patton's Third Army in Europe.

Working with the tanks got under Pete's skin, and as soon as we hit the west coast and took a breather he asked me again about transferring. Seems that a First Sergeant from one of the tank companies had said he'd accept Pete. Like hell he would! I was just opening my mouth to lower the boom when the Old Man walked up.

Now don't get me wrong. The Old Man was all right. He had really whipped the company into shape and made it a fine fighting outfit. But sometimes he got soft and let young soldiers talk when they should have been listening.

Well, it turned out that the Captain had been listening to Pete sounding off. He explained that his main responsibility as company commander was to keep the company ready to fight, and he wouldn't approve any transfer while the company was understrength. But he promised Pete that when the company got up to strength or when the war was over, he'd approve the transfer.

* * *

When the Chinese attacked in late November, we started yo-yoing south again. During the delaying action to the Imjin River, I saw Pete several times. He was carrying a BAR now, and the thing weighed almost as much as he did. But he seemed to be getting along, and he didn't complain any more than the next dogface.

In mid-December the regiment established a defensive position on the south bank of the Imjin River. As usual, Able Company was in front, manning an outpost line about 5000 meters forward of the MLR. That's where we spent Christmas of 1950.

I was out walking the line with

the Old Man one day when we ran into the Third Platoon leader, Lieutenant Walls, who was mad as hell. He had just made a weapons inspection and for the third day running had found Pete's AR in a lousy condition. Walls told the Old Man that he'd had continuous trouble with Pete's indifference and that he was ready to prefer court-martial charges.

The Captain called Pete over and asked what was going on. Pete complained that he just wasn't cut out to be an Infantryman. Besides, he'd kept his weapon just as clean as anybody else's and the people in the platoon were just picking on him. I'll have to give the Old Man credit. He rared back and gave that young soldier a chewing worthy of a buck sergeant back in the Old Army. When he finally stopped chomping he told Pete he was reassigned to the 57 mm recoilless rifle section, the nearest thing to a tank gun that a rifle company owned. And the Old Man further promised Pete that if he failed to produce in the weapons platoon, he'd damn well better join the Chinese Communist army, because things were going to be rough in Able Company.

After he teamed up with that 57mm recoilless rifle, Pete had no more trouble. In fact, he rapidly became the best gunner in the company. His sergeant, Branham, boasted that Pete could outshoot any other 57mm rifle gunner in the regiment. It got so that if Pete didn't get a first round hit, Branham would chew him out for getting lazy and loafing.

* * *

Operation Killer began in late January 1951. In early February we attacked north to the Han River across from Seoul, and in March we crossed the Han River east of Seoul and continued attacking north. By then, Pete was wearing Corporal's stripes and was training the other 57mm gunners and crews. He was still a scrawny little Mexican kid who spoke English kind of funny, but man, he was a real expert with his weapon and he loved it.

Both the Old Man and I had forgotten about Pete's wanting to transfer until during a short reserve period in mid-March when Pete brought in a letter of acceptance from the CO of a tank company in the division tank battalion.

The Captain was on the spot. We were up to strength, and he'd promised Pete he could go back to tanks. But now Pete was our best recoilless rifle gunner, and we'd just been alerted that we were going back into the line. Well, Pete was told that the company depended on him and needed him at least until the next attack was over. But as soon as the company went into reserve again, the Old Man would approve Pete's transfer with no *if's, and's* or *but's.*

We had a devil of a time when we went back into the line. The regiment attacked north for two weeks along a road running up a valley for about 20 miles. Able Company spearheaded all the way, it seemed to us. A couple of weeks aren't long in telling, but that last week of March and first week of April seemed like years. Every day that we attacked, we hit Chinese. Baker and Charlie Companies could walk up one side of the road and find nothing. Able Company could attack up the other side and run into a buzzsaw. If we changed sides the same thing would happen. I'm not complaining, mind you; I'm just telling you the facts of the case. Hell, Able Company more than handled everything it met and changed the morning report of quite a few Chinese Communist companies in doing so. No sweat! But it was a grind, and we lost some damned good men.

There was a big hill we called check point 9 commanding the main north-south road, one that we fought for all day before taking. Sergeant Leemy and a replacement, Averill, were killed on that hill. That was the fourth bullet that Leemy had stopped in two wars, and his second in Korea. Hill 180 was another all day fight. There we lost McGee, Glass, Kerr, and two of our South Korean soldiers, Lee and Pak. From Hill 180 we attacked north across the 38th parallel right up to the top of Hill 663 —that's meters, not feet. Lieutenant Golf and his runner, Ozier, were killed just short of the crest.

We weren't sorry to be relieved on top of Hill 663. The company had done a fine job, but we had been attacking for two weeks and had lost nine KIA and 11 WIA. We were ready for a rest. We were tired and dirty but proud when we came down from Hill 663. We had done a good job, knew it, and were proud of it. And we were looking forward to showers, clean clothes, A-rations and sleep.

There was a lot to see during our truck ride down the valley we had fought for. It looked like the entire Eighth Army had moved into the ground we had just taken. We saw artillery, radar units, reserve units, airstrips, supply dumps, hospitals, shower units and water points, CPs and all sorts of service units. The valley that had been lonely as we had attacked north was now crowded as a county seat on Saturday night. I wondered if any of those rear echelon folks ever wondered who took that ground for them.

I didn't know it at the time, but the Old Man had shared my thoughts. After we had detrucked in the reserve area, he gathered the company around him and made a little talk. I guess he knew then he would leave the company in a couple of weeks to become battalion S3 and was sort of saying goodbye. At any rate, he expressed what many of us had been thinking during our ride south.

He spoke with such sincere conviction that every man in the company stood up and listened. He

said every man there should stand tall and be proud of being an Infantryman. An Infantryman has to take off his hat to no one, for no man is better than he or has a more important job than he. Many's the time, however, he continued, when the Doughfoot forgets the importance of his job, feels sorry for himself and gets bitter. The main reason is that he rarely has the opportunity to see what he has accomplished. But today, as we rode south along the axis of our attack, every soldier had a chance to see what he had accomplished and how important his job was. What's more, the sole purpose of every man, every piece of equipment now in that valley was to support the Infantryman, so he could move forward, take more ground, and kill more enemy. In short, the be-all and end-all of the entire Army was to put Able Company—the Infantryman—on its objective.

The Old Man normally didn't talk much, but now he really poured it out. What did we see at the base of Hill 663? Artillery, ammo dumps, maintenance installations, aid stations, and command posts. Those people had moved in as a matter of course, but only because a lieutenant named Golf and his runner, Ozier, had been killed to take the hill.

The Captain concluded by telling us how proud *he* was to be an Infantryman serving with such a proud, tough, fighting outfit as Able Company. And when he finished talking, there wasn't a soldier standing there who wasn't proud that he was a fighting Infantryman.

* * *

A day or two later, as the Captain and I were catching up on administration, Pete came in. When Pete reported, the CO stood up, shook hands, handed him the signed transfer papers, and said that the company would miss him. Pete looked like he was going to cry, then he scuffled his feet and told the Old Man that he'd changed his mind about the transfer. He'd thought over the talk the other day, had thought about leaving buddies, and had decided to stay with the company until it got back to Japan. There'd be plenty of time to get back to tanks later.

This surprised the Captain and made him proud. He shook hands again, told Pete he'd be glad to keep him in the company, and said that he was a damned fine Infantryman.

* * *

When the Chinese Communist spring offensive began in late April 1951, our regiment moved into line to plug a gap between one of our sister regiments and an adjacent division. On the night of April 24th, all hell broke loose. The Chinese attacked and in short time had surrounded the regiment cutting it off from adjacent units. As usual, Able Company held a key position and seemed to catch the heaviest attack.

Shortly before dawn, the regiment was ordered to disengage, attack south and establish a new blocking position several miles to the rear. Able Company, astride the withdrawal road, had to hold its position until all other companies had disengaged and begun their movement south.

The Communists evidently sensed this, for just as the last of the other elements cleared our positions, the Chinese moved in and attacked down the ridge into our right flank.

To make a long story short, the soldiers on the company's right flank put up a hell of a fight, drove off the attack, and permitted the company to disengage and move south.

After daylight, when the regiment had established a new blocking position, I finally had time to get an accurate casualty report for the company. Only then did I learn what had happened on that right flank.

Immediately after Charlie Company had moved off our right flank, a Chinese company had barreled along the ridge into our right flank. They had obviously intended to roll up Able Company a foxhole at a time. And they damn near did it, too. Except for one thing.

Pete's recoilless rifle squad was dug in on our flank, facing the ridge along which the Chinese attacked. When those motherless Communists hit that squad, they stirred up a hornet's nest. That scrawny little Mexican kid, who claimed he wasn't an Infantryman, fought like a wild man. He yelled and cursed, and dared the Communists to come on and fight. He threw grenades, fired all his ammo, and then ran to the next foxhole and picked up a carbine that belonged to one of his men who had been killed. When he thought his men weren't firing enough, he gave them hell. Pete was all over the ridge like a scratching, screeching wildcat.

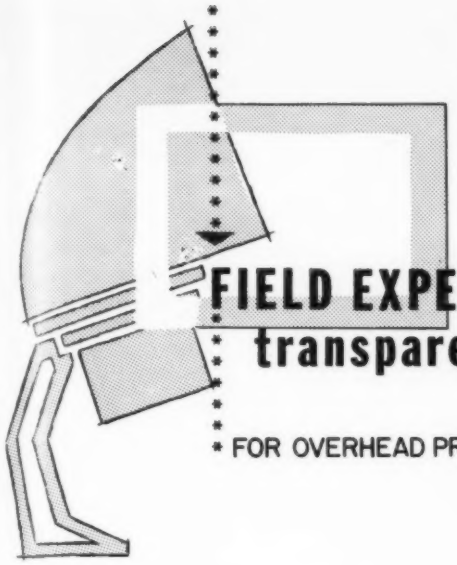
As those things go, it was a fairly short fight. Pete and his squad piled up Chinese like cordwood and made the survivors change their minds about continuing down the ridge. One of the last Communists to withdraw let go what must have been a full drum of burp gun ammo. It caught Pete square in the middle and just about cut him in two. He never knew what hit him.

* * *

Like I said at first, I don't know what makes a man an Infantryman. I've done a lot of thinking about it, and I'm not even sure why I stay married to the Queen of Battle myself—the bloody witch.

But there is one thing I know for certain. That scrawny little Mexican kid, Pete, *was* an Infantryman —the best!

Lt Col Berry, a 1948 graduate of USMA, served in the Korean War as a company commander with the 35th Infantry, 25th Division. Many observations leading to this article were made during that tour. He is now a student, Senior School, MCEC, Marine Corps Schools, Quantico, Va.



FIELD EXPEDIENT transparencies

FOR OVERHEAD PROJECTION

Alan C. Ramsay, ***Art Supervisor***
Editorial & Pictorial Office, USAIS

HOW MANY times have you said "If I could only make a color drawing transparency and project it on a Vu-Graph" or "I sure wish I could project this magazine picture on a Vu-Graph." This may not be as hard as you think providing you have a little patience and you are willing to do a little experimenting.

A method of making a transparency directly from a magazine page is the "picture transfer rubber cement method."

There are advantages and also disadvantages to this technique. First, it is fast, easy, and produces as good a transparency as the original picture used. The limiting factors are (1) the original picture is now destroyed; (2) the size of the picture determines the size of the transparency (most pictures will be 3¼ x 4 inches or larger); (3) the picture must be printed on clay coated paper. The following magazines are examples of clay coated paper: *Life, Look, U.S. News and World Report, Time,* and *Aviation Week.*

If the steps in the process are followed precisely, you can realize excellent results.

The picture transfer process makes possible a transparency direct from the printed page. The kind of paper on which the material has been printed is one of the main limiting factors. The process is simple. It involves merely the transferring of the ink from the printed page to a sheet of transparent acetate. The following steps give the entire process, which may run from 15 to 50 minutes, depending upon the working speed of the individual and the drying time allowed for the various steps.

1. Choosing the picture

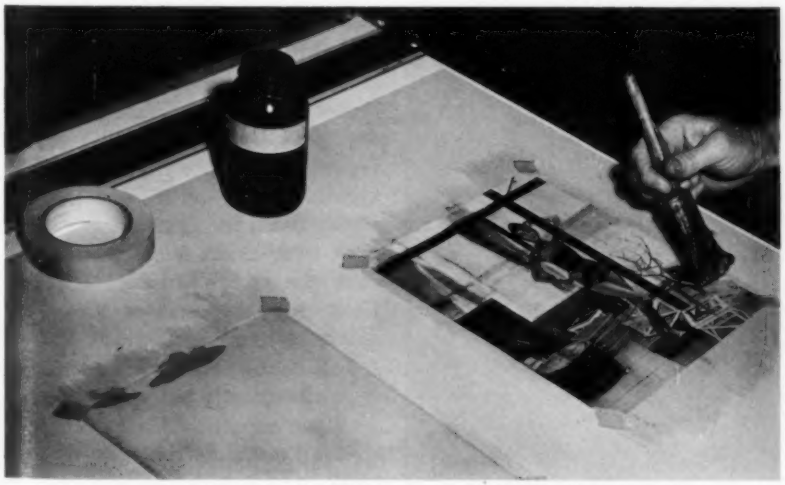
The picture chosen should be of good quality. If it is black and white, it should have strong ink coverage. Grays do not reproduce as well as black. The best transparencies generally result from pictures printed in color, but the color printing should be in good register (alignment of coloring) or the resulting transparency will appear to be out of focus when projected on the screen. It is not advisable to make transparencies smaller than 3¼ x 4 inches, because magnification will enlarge the flaws of the original ink image and give an undesirable effect on the screen.

2. Testing for use

By taking a moist finger and rubbing over an unprinted area, a white chalk residue will rub on to the finger tip. This indicates that the paper is clay coated. It is this clay coating that will release the ink and permit a transfer of the image.

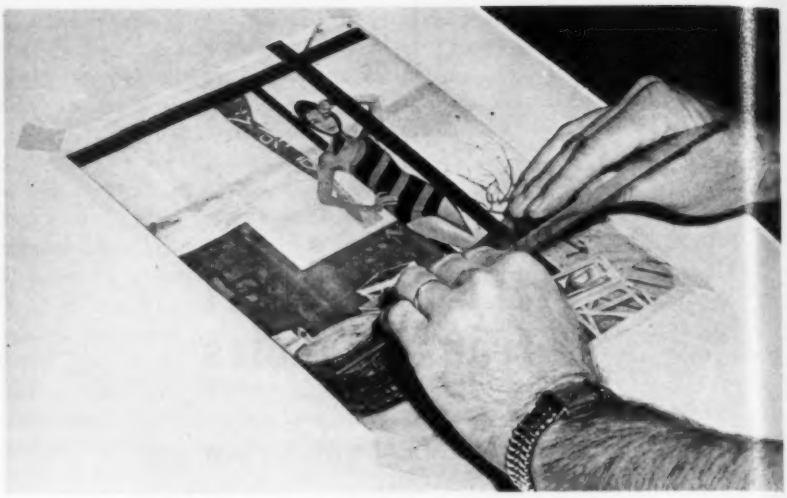
3. Coating face side of picture with rubber cement

Remove the picture from the magazine, leaving some margin around the picture to facilitate handling during the process. The face side of the picture should now

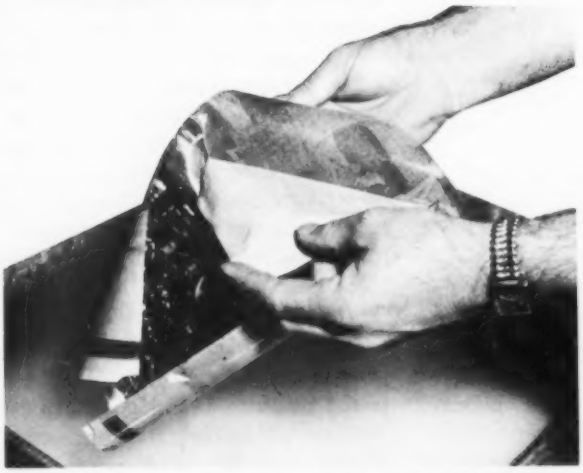


Coating the frosted acetate and picture with rubber cement

Adhering acetate sheet to picture



Burnishing acetate to picture to insure good contact



Peeling paper from picture (after soaking) leaving image on the rubber cement surface

Lightly washing off chalky material with cotton

Blotting transparency sheet to aid drying

be coated with a *smooth, even, thin* coat of rubber cement. (This is the most difficult step.) To facilitate this process, use a soft brush and easy flowing, good grade of rubber cement. You may have to thin it with rubber cement thinner or typewriter cleaner fluid. When applying the cement, make *fast, even* strokes with the brush, never going back over areas once covered. Be sure the entire area is covered. Next, lay the picture aside for about 15 minutes to dry.

4. Coating the frosted side of the acetate with rubber cement

Using matte finish (frosted) acetate, cover it with a coat of rubber

cement exactly as you did the picture, and allow it to dry.

5. Adhering the rubber cement surfaces

After both (picture and acetate) surfaces are dry, place the two rubber cement surfaces in contact with each other. This must be done with great care and requires practice to prevent wrinkles and blisters from forming between the two surfaces. Air pockets may be eliminated by piercing them with a sharp needle *from the paper side.* Next, take the back of a comb or other smooth hard object and rub it over the back of the picture to insure good adhesion between picture and acetate. It is often advisable to rub in both vertical and horizontal directions.

6. Soaking in cold water

Place this picture - and - acetate sandwich in cold water. Add some detergent to help the water soak through the paper surface. You will have to leave it in the water for 5 to 10 minutes.

7. Removing the paper from the acetate

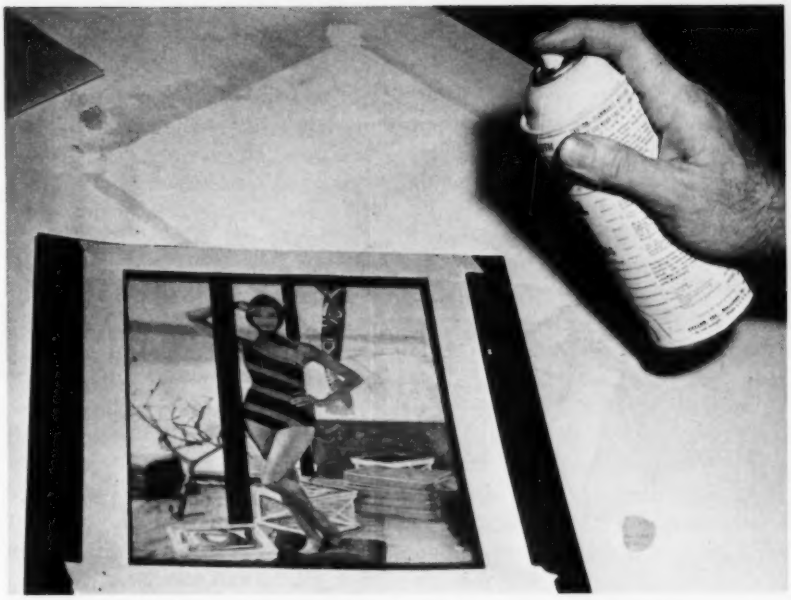
Gently pull at one corner to see whether the paper will release itself from the acetate surface. If the paper does not release itself easily, extra soaking is required. With proper soaking time, the paper can be pulled free easily, leaving the picture image on the acetate.

8. Washing off the clay

A light film of white chalky material (clay) will appear on the picture-acetate surface. You must wash this off with a piece of soft cotton. Be very gentle with this surface, for it is merely a thin coat of rubber cement which has absorbed the ink from the paper surface. The clay is the real reason why this process is possible, for when it is exposed to water most of it dissolves, releasing the ink from the paper.

9. Cleaning the transparency

A final check should be made to see that all foreign matter such as particles of dirt, cotton, or resistant paper fiber has been removed from the surface. If small pieces of fiber tend to cling to the surface, simply rub the surface gently with the tip of the finger and the fiber will usually roll free.



Spraying transparency with clear plastic spray to clear up frosted image and to protect it from scratching

10. Drying the transparency

Next, *blot* off excess water from the transparency. Allow it to dry (10 minutes or more). Long drying periods are most desirable. Then, to make it absolutely transparent, spray the rubber cement surface with a good grade of crystal clear plastic spray. This will harden, making a very tough surface. Again allow it to dry.

11. Binding the transparency

You can now bind the transparency or use it as is.

Remember that a transparency can be no better than the original. Making a transparency will take practice and requires clean and careful work (dust may cause imperfections). The picture transfer process is definitely limited but can be very valuable at times.

Fortunately, civilization has advanced since . . .

The Days of King Zog

Lt Col A. E. Seifert

KING ZOG, ruler of Mycenia, hitched up his leopard skin and stomped out of his cave in search of the Grand Wizard, whom he found lounging under a tree sipping fermented coconut milk.

"Wizard!" he roared. "There's work to be done. Get off your lazy hassock and be about it!"

The Wizard cocked a quizzical eyebrow. "What's the trouble, King?"

"I just got word those damned Pleistocenians are going to attack us again." He pulled up a dinosaur skull and sat down morosely. "Since they outnumber us, we need an equallizer. That's where you come in. I want a new weapon."

The Grand Wizard audibly sucked up the last of his drink and tossed the empty coconut over his shoulder. "Just what sort of weapon didja have in mind, King?"

"Well, here's the way I see it. Right now our archers can hit only one enemy at a time. If we had a weapon that could hit more than one, I figure we'd even the odds."

"Tell you what, King. Give me a couple of weeks with the Chief Engineer and I'll come up with something."

After Zog left, the Wizard began thinking wizardly thoughts. Naturally, a man of his eminence had numerous ideas, but the problem was to select one that would work. Two coconuts later a dim thought took shape, and the more he considered it the better it looked. Finally he staggered to his feet and went to find the Engineer.

The Engineer heard the Wizard through, but was hard to convince. He made charcoal drawings on brontosaurus hide. He figured from every angle, considered how long it would take to build a prototype, wondered where he could get the materials, and still questioned whether the weapon would really work. After many intricate computations, he was forced to admit it would work, and he agreed to use priority materials that Preventive Maintenance Division had set aside for another project.

After two weeks, during which work was feverish (and periodically slowed by visits from the Wizard), the completed weapon was ready to be shown to the King. The Grand Wizard and Chief Engineer ceremoniously carried it to the Royal Cave.

"Hail, oh King," cried the Wizard. "Come and behold the ultimate weapon!"

Zog rushed out. "Well, let's see it. Let's see it."

The Wizard proudly placed the weapon at the King's feet. "There you are, sir. There's the big equallizer."

King Zog had a puzzled look on his face. "Why, that's just another bow. Little bit bigger, but . . . What makes this such a superweapon?"

The Wizard hid his disappointment. "This is a bow, but what makes it different are those five notches on the handle. Now the archer can fire not just one, but five arrows at once! One archer is equal to five, and since we're dug in it makes us just about equal to the Pleistocenians."

Understanding slowly lit the King's face. "Sure! Nice work, Wizard. You, too, Engineer. Tell you what we gotta do now. Make a lot of these bows and issue them to the troops. Don't let 'em fool around experimenting. The Pleisties might

get wise to us. From all reports they'll attack most any time, so hop to it."

Accordingly, the great bows were made and issued. Those troops naive enough to ask questions were told they merely had to aim and fire. No problem. One astute archer who aspired to a commission pointed out that the bow was too strong for one man to shoot. This caused a Royal Investigation and ultimately a decision that the bow would be classed as a crew-served weapon. Every second archer was removed from the ranks to be Assistant Archer on each great bow. This left a surplus of bows, but not of archers.

You see, in those days it wasn't easy to find archers. Someone had to hunt for food, and someone had to skin animals for uniforms. And it took quite a few to manufacture arrows. As a result, Zog was unable to increase the TOE of his line companies.

On the day of the great battle to end all battles, Zog surveyed the field from a secure vantage point, waiting for his great bows to chop great holes in the enemy ranks. He waited and waited, but aside from a casualty here and there the enemy didn't falter. Zog hastened to his main CP and his Grand Wizard.

"What in the name of holy saurians is the matter? What's happened to the great bows?" He lifted the cowering Wizard by the scruff of his neck and shook him. "Answer me, you Eropian moron!"

"Give me a chance, oh King," gasped the Wizard.

The King threw him to the floor. "Speak, you unspeakable brachiopod."

"Good sir, the fault lies not with the weapon. We just never developed doctrine before the bows were issued." The King hesitated, poised to deliver a mighty kick. "You see, sir, the archers found that when they fired too close to our own troops they hit their friends. If they held the bow straight up and down, they had overs and shorts with each volley. And . . ."

His explanation was cut short unceremoniously by a sharp stone axe wielded by an adroit Pleistocenian. The King himself received a mortal wound from a spear.

Fortunately for us, civilization has advanced a long way since the days of King Zog.

Lt Col Seifert enlisted in 1935 and received, in 1942, his commission from the United States Military Academy. His assignments include assistant G3, USAREUR, and as MAAG to Japan. He is now Chairman, Armor Committee, Command and Staff Department, USAIS, Fort Benning, Ga.

COMBAT LESSONS

Following are extracts from *Combat Lessons* (World War II Combat Reports), *Combat Report from Korea*, and *ORO Report R-13*. They are brief, pertinent and worthwhile to Infantrymen.

Battalion S3: "We used white-phosphorous shells, fired at the rate of one per minute, to provide light to guide companies to their objectives in a night attack. 50-caliber tracers fired overhead are also helpful to troops in maintaining direction."

Intelligence Sgt: "Returning patrol members should be carefully questioned . . . on one occasion a patrol reported nothing of value had been observed. Questioning revealed that one man had seen a number of dead sheep. Another patrol was sent to this area and found a mine field."

Platoon Sgt: "Teach the men to throw grenades from every angle. In battle they won't get a chance to take up a stance and heave them gracefully."

Company Commander: "The effect on most men of the impact of battle is to cause them to want to do nothing. Driving leadership must be exerted to accomplish simple tasks, for men are likely to neglect duties which they know must be performed. . . ."

Platoon Leader: "At Wonju, we found the enemy dug in "L" type foxholes built somewhat like caves . . . we used fragmentation grenades without much success . . . WP and concussion grenades worked much better. . . ."

Explosive Firing Systems

Maj Frank H. Armstrong, CE

LIEUTENANT ANDREWS was "shook" when the Commanding General's helicopter entered the valley and hovered above the bridge. Indeed, he had cause for considerable concern because the fuse was burning for the bridge to be blown up.

Later, at his court-martial, Lieutenant Andrews explained that the rifle company demolition set included the electric and the nonelectric firing equipment. He had used the nonelectric, time fuse method because there had been a dust storm when he was priming the charge. Static electricity from the dust might have caused a premature explosion of the electric firing system. True, with the electric system he could have delayed blowing up the bridge until the copter had departed.

Fortunately for Lieutenant Andrews the court understood the dangers of dust storms' inducing electricity into electric firing circuits.

* * *

This fictional incident dramatizes one of the primary considerations in the employment of the demolition set, the command decision whether to use the electric, the time fuse, or a combination of the two firing systems. There is a definite time and place for each (Figure 1).

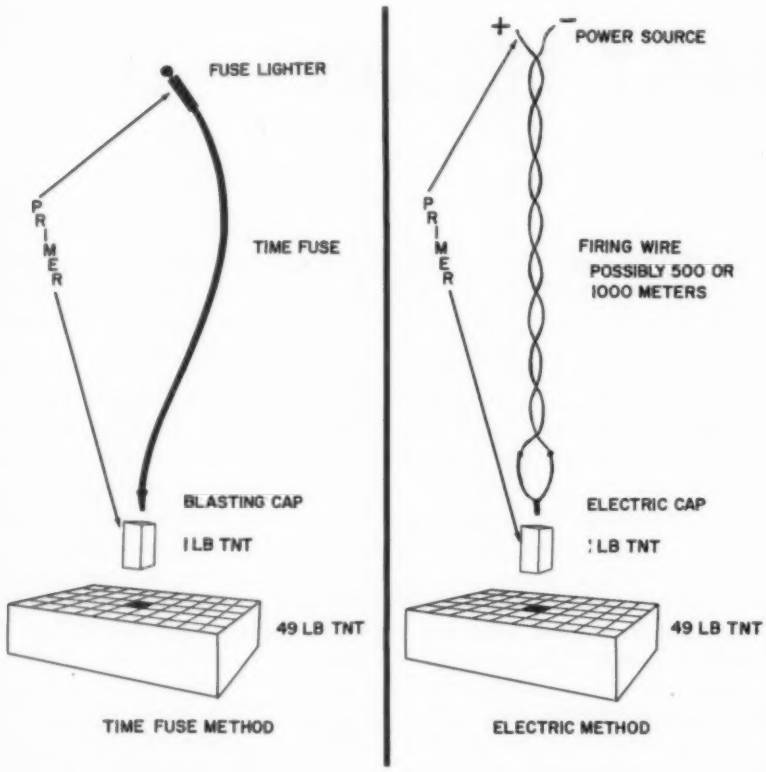


FIGURE 1. Components have been separated to clarify the methods.

ADVANTAGES OF THE ELECTRIC METHOD

The electric system's control over the exact time of the explosion will frequently be the paramount consideration. Lieutenant Andrews did not have instantaneous control. He was using 6 feet of fuse designed to burn at 40 seconds per foot. It may burn with a 15 per cent variation in time. If he had tested it he would have known the precise rate of burning. Otherwise he had from 3 to 4½ minutes from the time the fuse was lit until the explosion. A great deal can happen in four minutes: refugees can move onto a bridge; a friendly jeep could do likewise; or the enemy could move in and deactivate the charge.

The electrical system is more reliable in rain, providing there is no lightning (we'll discuss this later). The connections must be protected with electrical insulation tape. This can be done in a driving rain, whereas the black powder core of the time fuse is rendered useless by moisture. The use of the time fuse system will result in misfires if the fuse-cutter is wet, or if rain touches the open end of the fuse in the crimping or fuse lighter attachment procedures.

If the firing party suspects that the leads to an electrically primed charge are broken, a galvanometer test from the safety of their firing position can give the answer. A short circuit can usually be detected by a change in the galvanometer reading. However, if the short circuit is close to the charge, the change in the reading may not be detectable.

Black powder time fuse emits considerable smoke. This could be a disadvantage in some situations.

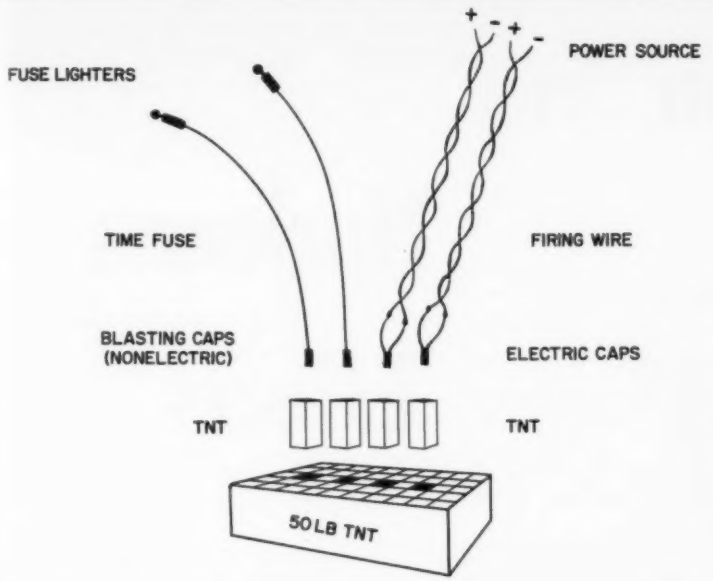


FIGURE 2. Combination dual firing system. The components must be assembled before firing.

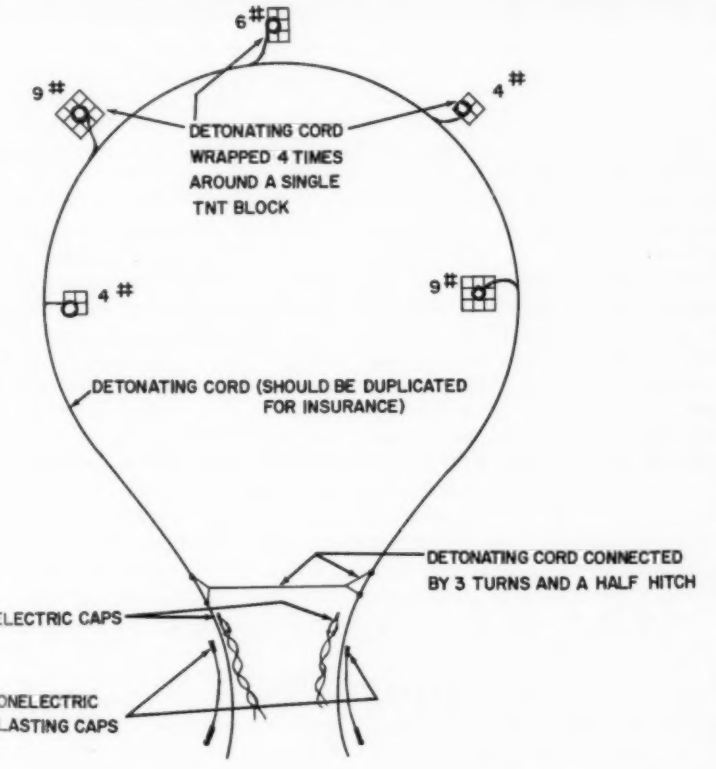


FIGURE 3. A use of primacord for detonation.

It is occasionally an advantage, for the smoking fuse is clear announcement that it is still afire and the charge has not misfired.

If an electrically primed charge should misfire, the corrective action may proceed without delay, providing certain precautions are taken. Even in combat, the investigation of a misfire in a time fuse system should be delayed at least until the maximum time for the fuse to burn has elapsed, and if possible, for 30 minutes. This is required in non-combat situations.

ADVANTAGES OF THE TIME FUSE METHOD

The time fuse method would mean less weight for a patrol because it won't need wire, a power source, or a galvanometer. It is also faster to install.

Lightning constitutes a hazard to the time fuse system, but the danger is considerably less than with the electric method. If lightning should strike the wires leading to an electrically primed charge, detonation would result immediately. It is possible that lightning several miles away could induce a charge into an electric firing system and cause detonation. This is a definite hazard when there is a conductor such as a fence between the lightning and the firing circuit. Experts consider lightning the greatest single hazard in electric blasting.

It is possible that a telephone lineman could accidentally detonate an electrically primed charge by unintentionally ringing a test telephone in on the firing wires. Further, there is a possibility that a radio transmitting in the vicinity of an electric firing circuit could induce enough current to fire the system. However, the chances are remote.

Dust storms, and snow storms in a very dry climate, generate static electricity. If enough electricity is generated, a premature explosion of an electric blasting cap may result. Dust storms present a serious

(continued on page 53)

A Lesson in Nuclear Effects

Capt James F. Bell, Inf

IN THE STILL predawn coolness the invading army lay coiled and prepared to strike. Most soldiers crouched low behind a shield of earth, in tense anticipation of the coming explosion. Never, they had been told, had such destructive force been unleashed upon a foe. Its violence would crush the enemy fortifications and cause survivors to reel back in panic and awe. A clear path would be opened to the vital hill beyond.

To the waiting men one minute seemed as ten. First rays of the sun turned the hilltop beyond to red, then gold — yet still they waited. Finally the earth beneath them shook. From the west came a dull roar, and one man climbed up to look in that direction. He described the spectacle: "... a huge column of dirt, dust, smoke and flame of fire ... which on reaching its highest point curled over like a plume ... in the column of fire and smoke the bodies of men, arms and legs, pieces of timber and gun carriage." The roar died away. In its place came the sharper pounding of conventional artillery, saturating enemy positions.

The scene described is not a prophet's vision of future warfare. It is taken from a page in history. The mass destruction weapon had its birth long before 1945, and far from Alamagordo. During the battle for Petersburg, Virginia, in 1864, the Union forces employed a unique weapon which seems to well fit this category. In both tactical employment and influence on operations it remarkably resembles our concept of the tactical nuclear weapon. At Petersburg, however, the weapon consisted simply of a large quantity of black powder.

June of the fourth year of the Civil War found the armies of General Ulysses S. Grant and General Robert E. Lee located in a struggle around Richmond. In mid-June, the focal point became Petersburg, a key rail center 20 miles south of the Confederate capital. Grant foresaw his seizure of Petersburg as a means of forcing Lee to choose between defending Richmond against siege, or abandoning the city and withdrawing to the west. Grant's first major attacks against Petersburg, on 17 and 18 June, did not produce a victory. The two exhausted armies dug in to the west of Petersburg. Long weeks of fatiguing and indecisive trench warfare followed. The battlefield became a vast complex of bunkers, covered trenches, and obstacles.

A central portion of the Union line was occupied by the 48th Pennsylvania Infantry Regiment. In this sector the opposing lines of fortification were little more than 100 yards apart. The commander of the 48th, Lieutenant Colonel Henry Pleasants, conceived the idea of mining the opposing works and blowing up "Elliott's salient," a Confederate strongpoint. A num-

ber of members of this regiment were miners by trade, and Pleasants himself was a mining engineer by profession. Major General Ambrose E. Burnside, 9th Corps Commander, heartily approved the plan and directed that operations begin at once.

Excavation of the mine began on 25 June. Pleasants' men tunneled a main gallery 512 feet in length, removing 18,000 cubic feet of material. At its end the tunnel forked to form two powder chambers, one 37 and one 38 feet long. Directly above these chambers were the guns of a Confederate battery and elements of the 18th and 22d South Carolina Regiments, the occupants of Elliott's salient. By 23 July the mine was completed.

During the weeks of tunneling by Pleasants' men, plans for exploiting the mine evolved slowly. The area of the 9th Corps was ultimately selected for a major attack by Grant. This choice was based on considerations other than the mine. A penetration here would place Cemetery Hill in Union hands. This hill was situated only 500 yards within the Confederate positions. Though not of great height, it dominated both Petersburg and the defending fortifications.

Detailed preparation of attack plans was accomplished by Major General George E. Meade, Commander of the Army of the Potomac. The mine would be counted on to create the initial crack in Confederate defenses. Its detonation before dawn on 30 July would signal an intense artillery preparation. Burnside's 9th Corps prepared to follow. The 2d Corps, as army reserve, would move forward on order. During darkness, obstacles would be gapped to permit rapid movement forward. Engineers would be located well forward to remove enemy obstacles and speed the advance of troops and artillery.

On 27 July, the work of charging the mine began. Eight thousand pounds of powder were packed in the eight adjoining magazines. The charge was fused, and forty feet of tamping sealed the mine. By the evening of the 28th the job was finished.

At 0446 of the 30th, the mine exploded. A Union witness to the incident, Major W. H. Powell, records his impression: "It was a magnificent spectacle, and as the mass went up into the air, carrying with it men, guns, carriages, and timbers . . . so close were the Union lines that the mass appeared as if it would descend immediately upon the troops waiting to make the charge. This caused them to break and scatter to the rear, and about ten minutes were consumed in reforming for the attack. . . ."

As for initial effects on the enemy, the Federal expectations were exceeded. Of the 300 occupants of Elliott's salient, 278 were killed in the blast. Confederate troops on both sides of the crater withdrew in terror, leaving an undefended gap of 500 yards in the defenses.

Recovering from their own surprise, troops of Burnside's leading division began to move forward. Their commander, Brigadier General James H. Ledlie, elected to remain in a bunker. From the first, things went awry. The defensive works had not been gapped. Small groups struggled forward through the maze of trenches and obstacles, and momentum was never gained. On reaching the smoldering crater, Ledlie's troops stopped. The scene was described by Major Powell:

". . . an enormous hole in the ground about 30 feet deep, 60 feet wide, and 170 feet long, filled with dust, great blocks of clay, guns, broken carriages, projecting timbers, and men buried in various ways—some up to their necks, others to waists, and some with only their feet and legs protruding from the earth. . . . The whole scene of the explosion struck everyone dumb with astonishment as we arrived at the crest of the debris . . . every man crowding up to look into the hole. . . ."

Down into the abyss plunged the Union troops. Although there was still no fire from the stunned enemy's guns, it had become habitual to seek protective cover. Some men began digging dazed Confederates from the loose soil; others surveyed the 30-foot bank to their front and found they could not surmount it. The planned engineer support somehow was not at hand. Soon troops of the two flanking divisions began pouring into the crater. Control disintegrated and confusion reigned as units intermingled. No organized effort could be mounted to continue the advance, to seize the exposed and undefended objective beyond.

Several hours later, another advance was begun. Brigadier General Edward Ferrero's 4th Division made its way with difficulty across the crater, through the milling mob, and attacked in the direction of Cemetery Hill. This effort came too late. Ferrero's battalions were torn by vicious artillery; those men

A MARSHALL AWARD Selection

who were not felled broke and sought protection of the crater and adjacent trenches.

Now the circumstances changed quickly. Opportunity, missed by the attacker, smiled on the Confederates. The initial shock of the explosion had been great, but after the first hour recovery was rapid. The penetration was sealed and a coordinated counterattack was launched early in the afternoon. This attack carried to the edge of the crater where the scene within was described by Confederate Captain William McCabe:

"From the great mortars to the right and left, huge missiles fell into the crater with dreadful accuracy and burst among the helpless masses huddled together . . . the very air seemed darkened by flying human limbs . . . without intermission, the storm of fire beat upon the helpless mass imprisoned within."

At 1220, Meade's order to withdraw reached the crater. Now the same disorganization that prevented success also impeded retirement; the obstacles that had slowed the advance presented a barrier to retreat. The carnage continued.

Finally, those Union troops unable to regain their lines surrendered to the Confederates. By mid-afternoon Lee's forces had reoccupied Elliott's salient. Union losses for the engagement approached 4,000 and were more than double those of the Confederates.

That the Battle of the Crater assumes new historic importance in the age of nuclear weapons is apparent. The lessons it holds may point the way to success on the future battlefield. The most vital of these lessons for the attacker is the need for rapid exploitation, dispersion, and aggressive leadership. These were lacking at Petersburg. For the defender the need is for depth in position, heavy fires to seal the area, and violent counterattack. All of these were exhibited at Petersburg. These lessons confirm the value of our current doctrine. The future tactician who ignores them will invite defeat.

A review of the events at Petersburg may have still further value. During the past 15 years we have accumulated a wealth of knowledge concerning the tangible effects of nuclear weapons. Yet, of their psychological effects we remain in virtual ignorance. Direct evidence of these effects can be provided only by nuclear combat. It is possible, however, that we may gain useful information from other sources. The Petersburg mine may provide a fragment of such information.

When the mine beneath Elliott's salient was sprung, most of its energy was expended in lifting a huge quantity of earth. Physical effects of the blast seem to have been quite localized, although some casualties resulted from collapse of nearby bunkers and, perhaps, from falling debris. Yet, for many yards on either side of the crater, men physically uninjured fled their positions. The resulting gap exceeded a quarter-mile in length and the abandoned positions remained unoccupied for nearly an hour.

Union troops next became victims of the unseen force. Their reactions on reaching the rim of the crater and viewing the spectacle within reflected a psychological influence completely unexpected. The record shows that many reacted as if hypnotized, milling about in awe, more concerned with the half-dead and half-buried men at their feet than with seizure of their objective 500 yards beyond.

The most significant aspect of the Petersburg mine was its influence on human behavior. This influence had first created the opportunity for success and then had done much to prevent its realization.

The men who struggled beneath the July sun at Petersburg were not newcomers to the horrors of war. They were both practiced in the control of fear and dedicated to the causes for which they fought. Today, could we do as well under the conditions they faced? How well will we do in the face of multikiloton weapons whose physical effects extend for thousands of meters?

To recognize the relative importance of mental factors on the nuclear battlefield is but the first step. We must also see the importance of finding useful answers to several fundamental questions: Can psychological effects of nuclear weapons be predicted? Can these effects be controlled or limited? If so, how? What information is needed to permit quantitative consideration of psychological effects?

Combat alone will furnish us with precise data concerning psychological effects; our dilemma is that we cannot afford to wait for precise data. Our need is not for facts meeting some rigid standard of "proof." Rather, we need useful answers warranted by available evidence. They may be prefaced by "probably," and will surely be open to revision. Our danger lies not in posing the false hypothesis, but in not posing any.

The Battle of the Crater at Petersburg was, in the words of Grant, "a stupendous failure." For all of its tremendous cost there resulted no gain or advantage for either combatant. But can it be counted as waste? As surely as men learn by experience, it need not be waste. To learn from history is a timeless challenge. If this page from our history can help point the way to effective preparedness for nuclear war, the cost of the Crater may be repaid a thousandfold.

Capt Bell received his commission in 1954 at the University of California, Berkeley. Since then he has served as platoon leader, assistant Battalion S3 and Battalion S2 with the 325th Airborne Infantry Regiment, Fort Bragg. With the 2d Battle Group, 39th Infantry, he was a company executive officer and company commander. Upon completion of the Career Course this year, he was assigned to ROTC duty at Idaho State College, Pocatello, Idaho.

References

1. Bosbyshell, O. C., *The 48th in the War*, Philadelphia: Avil Company, 1895.
2. Case, F. B., "The Petersburg Crater and Nuclear Weapons," *Military Review*, November 1960.
3. James, A. P., "The Battle of the Crater," *Journal of the American Military History Foundation*, Spring 1938.
4. Miller, R. O., "A Stupendous Failure," *Military Review*," July 1960.
5. Storm, R. W., "Psychological Effects of Mass Casualties," *Military Review*, September 1960.
6. Wise, J. C. *The Long Arm of Lee*, Lynchburg: Bell Company, 1915.
7. *The West Point Atlas of American Wars*, New York: Frederick A. Praeger, Inc., 1959, Volume I.

M-E-T-T

A recent study has disclosed that a wide degree of misunderstanding exists concerning the definition and use of the term METT in tactical instruction. As a mental checklist, to insure consideration of essential elements required in arriving at a course (s) of action considered in the estimate, the commander and staff habitually consider the mission, enemy, terrain and weather, and troops available (METT).

• *Mission.* The assigned mission dictates employment of the unit which, in turn, must be translated into missions for subordinate and supporting elements. Planning is oriented toward accomplishment of the mission.

• *Enemy.* All available information of the enemy's dispositions, strength, morale, composition, recent and present significant activities and peculiarities and weaknesses is considered.

• *Terrain and Weather.* Key terrain features, observation and fields of fire, concealment and cover, obstacles, avenues of approach and the effect of weather on visibility, trafficability, and men and equipment are considered in developing the best course of action.

• *Troops Available.* This term refers to all combat power available to the unit, to include maneuver elements, fire support, mobility means, logistical support, and attached and supporting elements. The disposition of the unit and adjacent units, and time and space factors must be taken into consideration. Classes I, III, and V supplies are of primary importance.

INFANTRY LEADERS HANDBOOK CHANGES. These are changes for pages 49 and 50 of the *Infantry* Leaders Handbook. Readers may cut out these changes and paste them over the present pages, since they are reproduced here in the proper size. At this time no action has been taken to have the Handbook reproduced for sale. However, when the arrangement has been made, announcement will be made in this magazine.

ARMY RULES FOR IMPOSING ADMINISTRATIVE NONPUNITIVE MEASURES

(Par 128c, MCM, 1951; AR 624-200, dtd 1 Nov 60)

WHO IMPOSES	Any commanding officer who has power to impose appropriate measures.	
UPON WHOM	1. Any military person of his command whose conduct warrants admonition or reprimand, imposed as corrective action, not as punishment (par 128c, MCM, 1951). 2. Any enlisted person whose inefficiency (the definition of which includes misconduct); conviction by civil court; failure to complete training; or impending undesirable discharge warrants reduction in grade (par 30, AR 624-200).	
HOW IMPOSED	Orally or in writing (except that reductions must be effected by written communication, and announced in orders of the headquarters of the reduction authority) (par 30, AR 624-200).	
	PROCEDURE FOR IMPOSING	
DETERMINE THAT	IF ADMONITION OR REPRIMAND IS TO BE IMPOSED	The person has conducted himself in such a manner as to warrant the admonition or reprimand contemplated.
	IF REDUCTION IS TO BE IMPOSED	1. The reduction you intend to impose is authorized (see maximum reductions authorized, below); 2. You are authorized to impose the reduction. [NOTE: A commander is not authorized to reduce an enlisted person who is a permanent E5 or above for inefficiency, until he has referred the case to a board of at least 3 officers, and has given due consideration to their findings and recommendations. The commander may not reduce a person to a grade lower than that recommended by the board.]
ADVISE THE PERSON	1. Orally or in writing of the measures you intend to impose unless a reduction for inefficiency is contemplated; 2. In writing, if reduction for inefficiency is contemplated, of the action contemplated and the reasons therefor, and that he has a right to tender a resignation under paragraph 5, AR 635-220, in lieu of reduction, if he is an enlisted person who has served 3 or more years on an unspecified enlistment (par 29, 30, AR 624-200); 3. That he may submit matter in mitigation, extenuation, or defense, but that he is not required to make a statement; 4. Of the exact measures, if any, which you finally decide to impose; 5. Of his right to appeal, within 30 days from the date he was reduced, to the next higher commander if he was reduced for inefficiency or conviction by civil court. No appeals are allowed for reductions for other reasons (par 31, AR 624-200).	
AFTER IMPOSING NONPUNITIVE MEASURES	1. In the case of enlisted persons, announce any reduction in orders of your headquarters and forward correspondence and documents regarding such reduction to Personnel Section for inclusion in the person's 201 file (par 9, AR 640-10). 2. In the case of officers and warrant officers, forward any correspondence and documents to Personnel Section for inclusion in the officer's 201 file (temporary records; par 11, AR 640-10; DA Form 201a; par 8d, AR 640-98; AR 600-31). 3. Process any appeal that is made (par 31, AR 624-200; Art 138, UCMJ). (NOTE: After processing is completed, appeals must be forwarded to Department of the Army.)	

49

MAXIMUM NONPUNITIVE MEASURES	
FOR OFFICERS OR WO	Reprimand or admonition.
FOR ENLISTED PERSONS	1. For Inefficiency: a. E5-E9: Reprimand or admonition, and reduction to the lowest enlisted grade*, if imposed by the commander of a regiment, battle group, separate or detached battalion, or any similar or separate organization for which the grade of lieutenant colonel or higher is authorized and a field grade officer is actually in command, provided that such commander has authority to promote to the grade now held by the person to be reduced (par 3, 30d, AR 624-200). b. E4 and below: Reprimand or admonition, and reduction to the lowest enlisted grade*, if imposed by a commander (including a company or comparable commander) who can promote to the grade now held by the person to be reduced (par 3, 30d, AR 624-200). [NOTE: Inefficiency includes not only technical incompetence but misconduct, failure to pay debts, and failure to graduate from NCO academy (par 30d, AR 624-200; 59 JALS 19/5).] 2. For Conviction, or adjudication as a juvenile offender, by Civil Court: a. E5-E9: Reprimand or admonition, and reduction to the lowest enlisted grade*, if imposed by a commander of the type defined in 1a, above, subject to note below. b. E4 and below: Reprimand or admonition, and reduction to the lowest enlisted grade*, if imposed by a commander of the type defined in 1b, above, subject to note below. [NOTE: Offense involved must be one which does not warrant undesirable discharge under AR 635-206. Reduction must be made within 30 days after notice of conviction or adjudication is received by the commander effecting the reduction. Reduction may be made without regard to whether the conviction is being appealed; however, if conviction is later reversed, the person concerned will be reappointed to the grade from which reduced or such higher grade to which he would have been appointed had he not been reduced.] 3. Who, As Students, Fail To Complete Course Successfully: a. Helicopter pilot trainees: Reduction to grade held upon date of entry will be imposed by school commandant (par 30f, AR 624-200). b. Officer candidates: Reduction to the grade held upon entrance into OCS, or such higher grade as the school commandant considers appropriate (par 30f, AR 624-200). c. Other students: Reduction to a grade commensurate with his ability, but not below Private E-2, or the grade held upon entry into the school, whichever is higher, if imposed by the school commandant or the authority who can promote to the grade from which reduced (par 30f, AR 624-200). 4. Who Are Awaiting An Undesirable Discharge: Reduction to the grade of Private E-1 will be imposed by the officer who has authority to reduce, upon the direction of the officer exercising General Court-Martial jurisdiction (par 30e, AR 624-200).

*NOTE: A noncommissioned officer may be reduced to a specialist grade for inefficiency or civil court conviction, provided the latter grade is authorized in the specific MOS of the person's qualification (par 30, AR 624-200).

50

I-M-P-A-C-T

"Got your troop-leading card?" This question is heard many times by students attending courses at the Infantry School. Without the card, five paragraph orders, the troop-leading steps, and estimates of the situation are easily confused. Before you know it, paragraph five of the order comes out something like "COCOA" or "OCACO."

To the new leader, all these lists and sub-lists can become quite confusing. Thus, the troop-leading card is neatly tucked away in his wallet, or laminated and kept in the field-jacket pocket. Now there is nothing wrong with this card, for it is much better to use it than to omit a part of the tested and proven troop-leading steps. But to allow our new leaders to become dependent solely upon a card would be a mistake, for there will arise many situations that call for quick and timely decisions, with no opportunity to review this most useful *training aid.*

A helpful substitute for the card itself is the mnemonic device of a "key word." Every Infantryman from Private to Colonel knows that COCOA is not a beverage, but rather critical terrain, observation and fields of fire, cover and concealment, obstacles, and avenues of approach. Attempts have been made to do away with the "key words," but students hang on to them because they are useful devices. I propose, therefore, that we adopt another key word to serve as a substitute for the handy troop-leading card. That word is "IMPACT."

IMPACT would be used to assist the leader in issuance of the operation order when the tactical situation allows time for only a hasty estimate of the situation and issuance of an attack order to the squads or platoons. IMPACT can help the leader organize his thoughts and insure that all information is included in the order. Here is what the letters stand for:

"I"—Information about enemy and friendly forces.

"M"—Mission of the Unit.

"P"—Plan of attack (fire and maneuver plan).

"A"—Administration and Logistics.

"C"—Command and Signal.

"T"—Time Check.

It sounds simple and it is. For some Infantrymen, this key word has already been as useful as COCOA and other memory aids. If it works, therefore, helping young leaders insure that they have covered all parts of the operation order, then why not teach it and use it? (Submitted by Captain Frederick E. Garman.)

(See cutout on reverse side)

MAKE INTEREST PAY DIVIDENDS

Capt Davant T. Williams, Inf

INSTRUCTING IS A form of investment. You won't find it listed on the financial page of the daily newspaper, but nevertheless it deals with two very valuable commodities, instructor effort and student time. It's poor business sense for an instructor to invest a large amount of time in researching, planning and preparing a period of instruction only to have it "fall flat" because of a lack of student interest. On the other hand, the instructor who plans in advance to control student interest is protecting his investment and guaranteeing that the hours students spend in his classroom will pay substantial dividends in military learning.

When an instructor speaks to his students, he is attempting to establish a channel of communication. He uses his voice as a transmitter and the students use their ears as receivers. If all goes well, the ideas formulated in the instructor's mind are transplanted in the student's mind. This sounds simple enough in theory, but the system is seldom 100% efficient. Perhaps the instructor fails to express his ideas clearly when he puts them into words. Perhaps the student's mind is an imperfect computer and inaccurately translates the impulses received from the ears. There are many reasons, but one of the most significant is a third called INTEREST. Too often the student is unable to maintain sufficient interest even to hear what the instructor has to say. Words spoken so carefully by the instructor are just noise bouncing off the student's eardrums, with no channels of communication established. To overcome this, part of the process of planning a period of instruction must include a plan for controlling student interest. It is sheer nonsense to try to talk to students if you can't keep them interested enough to listen!

At first thought you may be inclined to visualize the student as a miserable culprit who must bear the blame for his poor attitude and gross lack of interest. In rare cases this may be true, for there are always a few who come to class only because they must. But generally speaking, students are a very respectable lot. This fact we will all readily admit, since each of us has been a military student on many occasions. However, even the most enthusiastic among us will also admit that it is not easy to remain bright-eyed and motivated throughout a fifty minute lecture, especially when it is followed by another fifty minute lecture and another. We have all had the experience of attending a class that gets off to a good start. Initially we are attentive, motivated, and enthusiastic. But as the period progresses, the instructor's voice seems to fade away into the distance. Within ten or fifteen minutes we are no longer in the same classroom with him. We are out shopping for a new car, planning the week-end's activities or maybe both. Wherever we are, we aren't in class because we have gone mentally AWOL. As the instructor drones away we periodically return from our "twilight zone," but only momentarily. By the time class is over there is a serious doubt in our mind as to whether we were even there. A few weeks later when we try to study our inadequate notes for the examination, we know we weren't there. This is not really the student's fault, for it's sort of a natural phenomenon—an occupational hazard for students. It occurs because we can't focus our attention on an instructor for any great length of time unless he is taking positive action to keep us interested!

The length of time that a student can give his undivided attention to an instructor is called the INTEREST SPAN. Studies have been conducted to determine how long the interest span is, but results have been inconclusive. The length of the span will vary from one situation to the next because of the many factors that affect it including the time of day, the ineffectiveness of the instructor, the difficulty of the subject matter, the comfort of the students, and the physical arrangement of the classroom. As a guide figure, it may be said that the average interest span is some-

INTEREST FACTORS

Instructor's Voice

Combat and Historical Examples

Personal Experience

Humor

Recordings

Questions

Discussion

Dual Instructors

Panel

Skit

Training Aids

Demonstration

Performance

Problem Solving

Figure 1

where between five and ten minutes. But this figure must be used as a guide only. If in looking over your lesson materials it appears that you will be doing nothing but talking for a period of perhaps seven or eight minutes, you can be fairly certain that you are going to over-extend the interest span of many of your students. The instructor must avoid this! He must maintain a steady flow of student interest throughout the entire class period. Student interest should be like the steady flow of late afternoon traffic from a military post. Each intersection represents a hazard, a mental detour, and the instructor must be like the Military Policeman skillfully directing traffic, insuring that no one deviates from the prescribed route. In fact, the instructor must take his action before a single student considers detouring. This action taken by the instructor is the use of an appropriate INTEREST FACTOR.

There's nothing profound or complex about interest factors, although they can be so effective that they may seem a little magical. They are simply instructional devices used to maintain student interest. They bridge the dangerous gaps between individual interest spans. It's unrealistic to be too analytical about this subject, but for the sake of example let's say that a fifty minute class might have ten separate interest spans each having a duration of about 5 minutes. To maintain continuous student interest we must connect these spans with interest factors. Thus, it would take nine interest factors to connect the ten spans. Naturally this doesn't mean that every fifty-minute class is going to require exactly nine interest factors, but this at least gives us a theoretical approach to the problem.

About this time you are surely wondering what an interest factor is. Keep in mind that to qualify, it must not only stimulate interest, but it must also teach. It is not a gimmick like the M-80 firecracker so often dropped behind the bleachers to "wake 'dem recruits up."

The variety of interest factors is unlimited. Many instructors have a natural talent for them and use them effectively never quite realizing why their classes are so successful. On the other hand, there are many sincere, hardworking instructors who are in dire need of these simple devices. The most commonly used interest factors are described in Figure 1. This list of principal interest factors is by no means complete. The variety of factors is limited only by the instructor's imagination and ingenuity. The instructor who limits himself to one or two training aids is cheating himself by failing to capitalize upon a wide variety of interest factors. On the other hand, the instructor is not expected to present a three-ring extravaganza in stereophonic sound and natural color. Teaching must never be sacrificed for entertainment. Above all else, interest factors must teach; if they can also entertain, this is a desirable bonus effect.

Your lesson plan is not complete until you have planned for interest control. Ask yourself a few searching and perhaps embarrassing questions. How much pure lecture is there going to be? How often will you find yourself *just* talking for periods of six, eight, ten minutes or more? What would be your reaction if you were the student and

"Believe I'll plan to use a short combat example to initially gain attention."

"This teaching point is rather technical and must be developed by lecture. If I use a good Vu-graph slide for each of these supporting points, maintaining interest should be no problem. I'll plan on lots of color and some cartooning for added interest."

"This teaching point is ideal for conference. I'll plan a stimulating lead-off question to get a discussion started. Good follow-up questions will keep the discussion going and should develop some spontaneous class humor."

"This quotation here will be more effective if I put it on tape. I can check out a tape recorder from the Post Film and Equipment Exchange."

"A short demonstration is essential here. I'll follow it with student performance. Nothing like learning by doing! This not only meets the traditional requirement for the application stage of instruction, but will insure student interest."

"I have the perfect joke to work into my conclusion. It ties in, too."

"To really emphasize my summary I'll get some fluorescent chalk and a black light from the Training Aids Sub-center. This will put new emphasis on my summary when I outline it on the chalkboard."

(Draft)
LESSON OUTLINE

TITLE: .....

I. INTRODUCTION: .....(5 min)

II. BODY:

A. First Teaching Point: .....(10 min)

1. .....
2. .....
3. .....

B. Second Teaching Point: .....(15 min)

1. .....
   a. .....
   b. .....
2. .....
   a. .....
   b. .....
   c. .....

C. Third Teaching Point: .....(15 min)

1. .....
2. .....

III. CONCLUSION: .....(5 min)

Figure 2

had to listen to this lesson as it now stands in draft form? Don't be shocked if this analysis produces a vision of students with blank faces, glassy stares, and absentee minds.

The solution to the problem is simple. All you have to do is to isolate those areas where it appears that interest may lag and the span of interest will be over-extended. Then select appropriate interest factors and insert them into your outline. Figure 2 illustrates the mental process that an instructor will go through as he applies this technique.

This just about completes the interest picture. There's just one more step and it deals with an intangible we might label "flexibility." The instructor may have an excellent plan for controlling interest but find that for some unexplained reason things just don't go according to plan. Perhaps one of his interest factors has failed, or the average span of student interest was even shorter than anticipated. Perhaps the students were on a night problem the previous night. Although they will get their compensatory time in the afternoon, in the morning in class they are just plain tired. Such a situation calls for an immediate reaction from the instructor through planned flexibility. The flexibility derives from having a reserve of interest factors. When student interest begins to lag, (and the observant instructor can always sense this), the instructor is ready with an extra joke up his sleeve, some additional questions he can ask, or an extra Vu-graph slide that he can use to immediately stabilize the flow of interest.

And so planning for the control of interest is easy. Just observe the following three rules:

1. Analyze your draft outline in terms of interest.
2. Insert *interest factors* in all areas where it appears that student interest may lag.
3. Plan a reserve of interest factors for *flexibility*.

Planning for interest control is such a simple procedure that it is often neglected in the process of preparing instruction. It's just so obvious that it is overlooked! However, it is essential, for it can easily spell the difference between successful and unsuccessful instruction. If the students don't listen, they can't possibly learn.

Capt Williams is presently assistant PMS at Stanford University. A 1948 ROTC graduate of Davidson College, N. C., he served with an advisory group, FECOM, Korea, in CONUS as a company commander, and later taught in the Instructor Training Section, Office of DI, USAIS.

Explosive Firing Systems (continued from page 45)

hazard. A number of accidents have occurred as a result.

Static energy can also be produced by escaping steam or by revolving items. This can be a definite danger to electric blasting but is a lesser hazard to the nonelectric caps.

Power lines constitute little danger to the time fuse method. The primary hazard in the use of the electric firing system near a power line is that the firing wire may be blown into contact with the power line. Thus the electricity from the power line will shoot to the other end of the firing wire which probably has an unfortunate individual hanging onto it. Contact betwen cap leg wires or leading wires and power lines has resulted in a number of accidents in which personnel have been seriously burned and in some cases electrocuted.

The decision concerning the method to employ should consider these advantages and disadvantages in relation to the effect that a premature detonation or a failure would have on the mission.

COMBINATION DUAL FIRING SYSTEM

Positive detonation of an explosive charge can best be assurred if two electric and two time fuse (nonelectric) primers are employed. This is called a combination dual firing system (Figure 2).

In Lieutenant Andrew's case, the combination dual firing system was inadvisable, for the dust storm could have caused a premature explosion of the electric primers. However, when the dual firing system cannot be employed, it should nevertheless be prepared because the situation may change. As a matter of fact, Lieutenant Andrews should have prepared electric primers in case the dust storm subsided.

Normally only one electric cap should be attached to the end of each firing wire. The dual electric primer should be attained by installing two firing wires over separate routes. A greater number of caps increases the danger of a premature explosion.

Separate charges that are to be detonated simultaneously should be connected with detonating cord (Figure 3). Only one set of primers is employed. There is no recorded case of the detonation of Primacord by extraneous currents.

As I have indicated, the time fuse (nonelectric) method and the electric method of detonating explosive charges are both possible using components of the rifle company's demolition set. Each of the systems has specific advantages and disadvantages. Platoon leaders and company commanders must analyze their problems in each situation as it arises, and decide which method is to be used. The decision must be a careful one based on consideration of all factors, for it affects the safety—the very lives —of the men involved.

MAJ ARMSTRONG, an enlistee with the National Guard in 1939, received his OCS commission in 1942. He served in Europe and in Korea and is a graduate of both the Artillery and Engineer Advance Courses. Present assignment is with the Engineer Committee, Command and Staff Department, USAIS.

REORGANIZATION OF THE INFANTRY

This is the first in a series of articles to be published in *Infantry* concerning reorganization of the Army. Our emphasis will be on Infantry units, of course, but not to the exclusion of others. The Infantry School is at work, and has been for some time, on new field manuals and new doctrine to accommodate the new structures. As these are approved, they will be published or mentioned here in one form or another. We may be a little later than some other publications in general information, but we should be able to be timely insofar as manuals and other Infantry doctrinal matter is concerned.

One point of interest: as it stands now, the new field manuals will be "vertical" rather than "horizontal," meaning that an Infantry company commander will have a single manual for any type of Infantry company, foot, mechanized, airborne, or motorized.

Following is the first official unclassified release concerning the reorganization. Some elements have been omitted wherein they do not deal with specifics of organization.

THE reorganization develops a new degree of standardization in organization, which will facilitate training as well as the tailoring of divisions to suit the mission and the terrain in which they will fight. The Infantry, armored, and mechanized divisions are constructed by adding varying mixes of combat maneuver battalions to a common division base. The manuever battalions are Infantry, tank, and mechanized Infantry. A similar study is underway on the airborne division, and is expected to result in an organization of comparable flexibility.

The division base includes the command and control elements, reconnaissance elements, combat support elements, and administrative elements. It includes three brigade headquarters which are capable of controlling the tactical operations of several attached maneuver battalions and appropriate combat support and administrative support elements. Brigade elements will not normally enter administrative channels between the division and the attached battalions.

The combat maneuver battalions, which are added to the division base to construct the various divisions, are as nearly the same in organization as possible, consistent with their individual roles. There are some characteristics common to all battalions. They are administratively and tactically selfsufficient. All battalions are of essentially one combat arm; i.e., armor in the tank battalion and Infantry in the mechanized and Infantry battalions. Organization of the division is facilitated by having battalions capable of giving up temporarily a company of one type and accepting temporarily a company of another type.

THE various types of divisions are constructed by combining different mixes of the combat maneuver battalion "building blocks" with the common division base. An armored division would be a division with approximately equal numbers of tank and mechanized Infantry battalions, while a mechanized division would have a great proportion of mechanized Infantry battalions. An Infantry division would be a division with predominantly Infantry battalions, but with some tank battalions. However, any type of division may have all three types of battalions if the mission or the operational environment indicated this organization. There could be as many mixes of battalions as there are divisions, with the total number of maneuver battalions varying from six to fifteen, each division being tailored to the mission of the division and to its expected operational environment.

The strength of a *typical* division would be approximately 15,000. Once organized for a particular strategic mission and operational environment, the composition of the division would remain relatively stable.

ADMINISTRATIVE support for the division is provided by a division support command organized on a functional basis to provide supply, field maintenance, medical support, and administrative services to the division. The division support command is an operational command directly under the division commander. Administrative support of the division in field operations is retained to the maximum practicable degree at levels above division in order that the division and lower echelon commanders can devote maximum attention to tactical operations. While the composition of the support command is organizationally identical for all divisions, the equipment and personnel in the supply, transport, and maintenance area varies for each type division, depending upon the number and type of maneuver units.

The Infantry division will not be motorized. The number of vehicles in the Infantry division will be kept austere to retain its strategic mobility where air or sea lift are at a premium, and to retain its cross-country mobility in terrain where foot-mobility is essential. The division is capable of accepting attachments of vehicles for motorized operations when required.

Artillery Supporting Fires

Capt Charles B. Lee, Arty

The basic reason for the existence of Artillery is to support the ground-gaining arms by fire. There are two men who represent the key to the Artillery's success in carrying out this mission. They are the Artillery forward observer, who must know his job, and the Infantry unit leader, who must know how to use to best advantage the services offered by the forward observer.

The forward observer with a rifle company comes from the Artillery battalion in direct support of the battle group—the "team-mate" of the battle group. He will normally remain with the company even when it is in reserve. Although he is not under the command of the company, he will comply with all possible requests. Essentially, the forward observer is on his own. He positions himself so that he can carry out his primary mission of providing close fire support for the company. His section is organized to accomplish this task most effectively.

The forward observer section consists of the FO himself (a lieutenant), the reconnaissance sergeant, and a radio-telephone operator who is also a driver. The reconnaissance sergeant is the forward observer's right-hand man, capable of relief of the FO when required.

The equipment of the forward observer section is light and portable, since the section, although it has a jeep and trailer, must operate on foot. For observation, the section has two pairs of binoculars. For communication, it has an Artillery radio set AN/VRC-9 with remote control, an Infantry radio set AN/PRC-10, and two telephones with a small quantity of wire. The AN/VRC-9 is, until wire is installed, the vital link with the Artillery battalion fire direction center, where all fires are requested. The AN/PRC-10 is used in the company command net, and facilitates rapid receipt of fire requests from the supported units.

The primary function of the forward observer is to adjust Artillery fire. This is, of course, his traditional role and is well known. However, there may be times when you as an Infantryman will find yourself in a more advantageous position to adjust Artillery fire, or the FO section may not be available at a critical time. There is always the danger, of course, of the section's being wiped out. In such situations, the Infantryman needs to have a working knowledge of the four simple essentials of effective Artillery fire

The Forward Observer Section.

adjustment. These are (1) Locate the target; (2) Determine a grid azimuth; (3) Request Artillery fire; and (4) Adjust the fire onto the target.

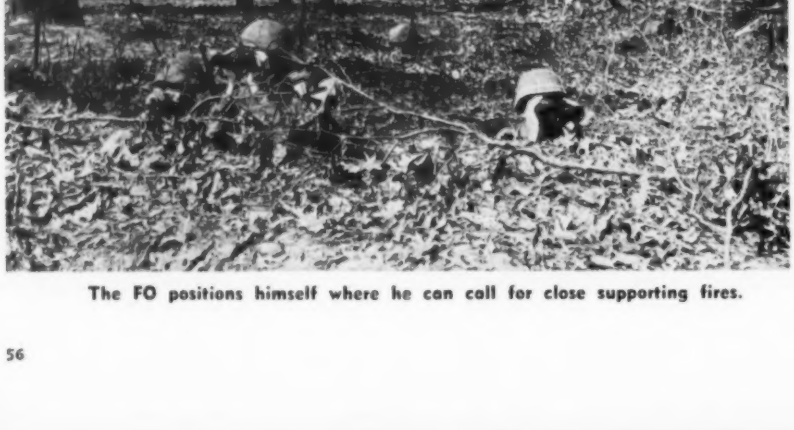
These essentials are even easier than they seem. The location of the target may be sent to the Artillery in any manner that is understood by both the observer and the fire direction center. For example, it may be expressed in grid coordinates or perhaps determined from a smoke shell in the center of sector. The only requirement is that the observer and fire direction center understand each other.

The azimuth needed is the azimuth from the observer to the target. Ideally, this is the grid azimuth, but any approximation such as simply "Northeast" will work. The more accurate, of course, the better.

In requesting Artillery fire, simply tell the Artillery what you need, where you need it, how much is needed, and when, if applicable. Then adjust the fire onto the target by means of short, simple commands so as to move the point of impact of the adjusting rounds to the target. That's all there is to it — no mirrors or crystal balls required. If you think you need further information, however, there are several publications such as FM 6-135, Adjustment of Artillery Fire by the Combat Soldier, which discuss fire adjustment in detail.

The forward observer team, in addition to its role in adjusting Artillery fire, also has a hand in fire planning. Together with the company commander, the forward observer plans fires on known targets, suspected targets, and key terrain features. He coordinates the fires of the Artillery weapons with the fires of the Infantry company in both offensive and defensive situations. In the offensive, fires are planned on all known enemy locations which could influence the attack of the company. Let us assume, for example, that we are going to attack tomorrow morning and we have located an aggressor machinegun today. If it's not bothering us now, it may be best to wait until just before we jump off in the attack to fire on the machinegun. If we shoot at it now and don't destroy it, it may be displaced to another location, and tomorrow when we jump off, we won't know where it is located. So the forward observer will plan fire on the machinegun now, but will deliver the fire tomorrow. Artillery fire planning, then, is nothing more than arranging to hit the enemy with Artillery fire at the proper time and place. Should this machinegun start bothering us, however, the forward observer would quickly bring fire on it.

The forward observer also plans fires on all suspected enemy locations. There are often situations in which he can actually see something, but isn't certain what it is, or times when he sees nothing but, based on a knowledge of the enemy and other considerations, suspects that something is there. In planning fire on these suspected locations, the forward observer must be careful lest he plan fires everywhere. There must be a good reason for each planned concentration. For example, fires are planned on prominent terrain features. These concentrations are useful in providing protection from counterattacks while reorganizing and consolidating on the objective. The forward observer plans such fires on two to four prominent terrain features around the front of the company objective so that in the event of counterattack, he can make a quick shift of fires to the preplanned concentration closest to the attacking enemy and "fire for effect" on the aggressor. These fires are descriptively called protective concentrations. Three protective concentrations should suffice for the average company objective. These protective fires should be located close-in to the company position—within the maximum effective range of enemy small arms because any target which is farther away is not immediately endangering the com-



The FO positions himself where he can call for close supporting fires.

pany position, and the forward observer would have sufficient time to adjust fire onto such a target. The protective concentrations are for use when the time is limited. Because the forward observer can seldom see all of the protective concentrations he has planned, it is mandatory that the location and designation of each planned protective concentration, as well as all other planned fires, be given to the company commander and platoon leaders. These individuals can then utilize them and call for fire as the situation requires.

Fire planning in defensive situations is much the same as for offensive operations. The object is the same — effective close fire support for the company. The forward observer and the company commander pool their knowledge of the company mission, the situation, the aggressor and the terrain, and plan fires accordingly.

There is one type of fire which is used only in the defense which deserves mention here. This is the barrage. The barrage is a barrier of fire designed to break up the final enemy assault on our defensive positions. It is integrated into the final protective fires of the company. Although the battle group commander will normally designate the general location of the Artillery barrages, it is the rifle company commander who actually pins down barrage locations in his company sector. All Infantry unit commanders, including platoon leaders, are authorized to call for an Artillery barrage.

The Artillery forward observer has three responsibilities in connection with a barrage. First, he transmits to the fire direction center the location of the barrage, as determined by the company commander. This allows the computation of firing data. Second, time and ammunition permitting, he will adjust the fire onto the designated barrage location to insure accurate delivery. And, last, the forward observer will transmit the order to fire a barrage to the fire direction center when the barrage is called for by the Infantry Commander.

Artillery Target List

To: Arty Bn FDC 3 Aug 1961

Tgt Nr*	Description	Coordinates	Remarks
AE 001	MG Pos	17129250	
AE 002	road junction	15609152	protect conc
AE 003	bridge	1690 9244	protect conc
AE 004	creek bed	1682 9180	protect conc
AE 005	bunker	1829 9335	
AE 006	suspect OP	1890 9296	smoke on call

R. L. Arter
FO with Alpha Co

*Targets are numbered consecutively. Numbers are assigned in SOPs.

FIGURE 1

The discussion of a fire plan may conjure up images of large maps with several complex overlays. Happily, this is not the case. The fire plan for a company may be merely a target list (Figure 1). This target list, prepared by the forward observer, is the fire plan. Each target is identified by number, adequately described, and located as accurately as possible. Any other information needed to permit the fire direction center to make a sound judgment in firing on the target is included in the remarks column. The list is informal and simple, and is easily transmitted to the fire direction center by radio, telephone or messenger. As it becomes necessary, additional fires are planned in the same manner and added to the target list.

The fire direction center is the hub of Artillery fire support. The fire direction center receives all forward observer fire requests and converts them into firing data for the weapons. It consolidates the fire plan—the target lists—from all of the forward observers into the battle group's Artillery fire plan. It is also the source of additional Artillery fire by making such needs known to Division Artillery and other Artillery units. It is in fact, the "end of the line" of our forward observer's communications.

This is how the Artillery forward observer arranges for Artillery support for "his" Infantry company. For him to function at maximum efficiency, however, the supported Infantry unit commander must understand the FO's role and utilize him properly.

The Artillery is justly proud of its established reputation on the battlefield. This reputation was achieved, however, not by Artillerymen alone. Rather, it was achieved through the intelligent use of Artillery support by Infantry leaders in countless situations. This very potent source of support will continue to be the powerful friend of the fighting man as long as the fighting man's leaders understand it.

Capt Lee, commissioned into the Artillery at USMA in 1949, served with artillery units in both Korea and Germany. In CONUS he attended the Artillery Advance Course and served as instructor, Artillery and Missiles, Fort Sill. Presently he is an instructor, Artillery Committee, Command and Staff Department, USAIS.

RIVER NAVIGATION

Lt Jarold L. Hutchison, Inf

A little-known and seldom-used military technique for successful navigation of an inland waterway has been developed by the Infantry School's Florida Ranger Camp. The development of this technique was prompted by one of the fundamental truths governing warfare—the Principle of Surprise.

The Department of Military Art and Engineering of the US Military Academy has defined the Principle of Surprise in this manner:

> "Surprise.—Accomplish your purpose before the enemy can effectively react. *Surprise must be sought throughout the action by every means and by every echelon of command.* Surprise may be produced by measures which deny information to the enemy or deceive him as to our dispositions, movements, and plans; *by variation in the means and methods employed in combat;* by rapidity and power of evacuation; *and by the utilization of terrain which appears to impose great difficulties.* Surprise may compensate for numerical inferiority." [Italics added.]

Certain elements of this definition attach significance to the use of a river, perhaps a significance that most Infantrymen fail to comprehend. Rivers, streams, bays, and even coastal waterways can and should be used whenever possible to gain the all-important element of surprise. Waterways can be used to advantage if certain basic skills and techniques are first recognized, mastered through training, and put into effective operation by a commander who realizes that a river is more than just a natural obstacle. Granted, a river is a serious obstacle; nevertheless, it is also an ideal means of transportation compared to dismounted movement, especially in terms of greater speed (even when moving upstream), additional equipment-carrying capability, and silence of movement. Effective use of a river is certainly a "variation in the means and methods employed in combat." Further, depending upon the exact nature of the terrain, use of a waterway may be discounted by the enemy due to the "inaccessibility or difficulty imposed."

Today, many soldiers feel that practice in navigating a river is unnecessary; that it is a waste of time. This idea could not be more untrue. Rivers afford many tactical uses to the front-line unit commander, among which infiltration and patrolling are primary offensive considerations.

Many military skills must be incorporated into a training program in order to prepare for conducting a river navigation exercise. Subordinate leaders must be proficient in the use of the compass, in map reading (both topographic and photomap), in interpreting and reading aerial photographs, and in all aspects of individual day and night training. In addition, training must be conducted on the use and handling of small boats suitable for river navigation. The Engineer assault boat is most suitable. Its durability for overall use offsets the great amount of noise which is caused when a paddle strikes the side of the boat. (Note that paddles can be padded to prevent direct contact with the boat, thus reducing the noise level.) Any of the following may also have a use, depending upon the nature of the waterway: canvas reconnaissance boats, bridge erection boats, and pneumatic landing boats.

Certain organizational steps must be taken before effecting any actual navigation. The boat must be provided with a crew of paddlers and a coxwain. The coxwain, who is in charge of the crew, is not nec-

essarily the tactical leader. He is a soldier who is thoroughly trained in handling small craft. The boat crew must also include a navigator and an observer who ideally are not members of the paddling crew.

Navigation may be conducted in several ways: by simple memory, by the "poncho method," or by the strip map method. Memory alone is adequate if the unit is to move a relatively short distance or to a well defined point of debarkation. Increased length of the move, of course, increases the chance of a navigational error. Short moves require little planning; a simple plan committed to memory will suffice.

The "poncho method" is probably the most desirable method of navigation for any move, but especially for a long one which has a poorly defined point of debarkation. In this method, the navigator is positioned on the floor of the boat under a poncho to preclude the unintentional showing or reflection of light while moving at night. He is equipped with a flashlight, compass, map, and a pencil. The observer, who needs no special equipment for most operations, should position himself well forward in the boat in order to observe both natural and man-made features on or near the river's edge. By being forward, he can also alert the coxwain to any obstacle in the water.

The poncho method of navigation uses the navigator and observer to chart their exact position at all times. The observer calls turns and bends to the navigator who, with the aid of his compass, associates this outside information with his present position on the river. When calling turns, the observer should, of course, speak as silently as possible when proper noise discipline is essential. He should refer only major changes of direction, since many slight deviations may be confusing. However, he should alert the navigator whenever the boat turns because of crew failure in maintaining proper direction.

The navigator begins the river move by determining azimuth upon which the boat is moving. Thereafter, if his compass is held in a fixed position, he will know where he is based on compass changes. Thus, the navigator and the observer, working together, stay abreast of their location. This technique permits the boat to move easily to any predesignated landing site, a requirement when on a patrol mission to infiltrate the enemy's battle position.

Items needed to conduct a river navigation exercise include a poncho, compass, flashlight, pencil, and map.

Another technique of navigation is to prepare a strip map of the waterway to be navigated, for use by the observer when circumstances prevent using a navigator. At night, drawing the map on a piece of acetate-covered phosphorescent or luminous tape, using heavy grease pencil markings, will facilitate reading it. The map simply indicates critical terrain features in the river which can be used as check points. Critical azimuths may be shown for added references in long stretches of the river. This method, of course, can be used in conjunction with the poncho method because it provides a time-distance check of the move. By noting the time required to move from the point of origin to the first check point, and comparing it with the distance traveled, a factor is found which will indicate the time necessary to complete the movement. This method, however, presupposes that the boat moves at a uniform rate in the water.

The using of an inland waterway to conduct offensive operations requires prior organization and training. A commander confronted with the problem should provide for initial training and indoctrination, for use of issue or expedient boats, for basic organization of boat crews, and for effective navigation training. This is indeed no small task. In the final analysis the commander's ingenuity will be taxed a great deal.

As General Bruce C. Clarke, Commander - in - Chief, USAREUR, stated in a recent edition of *Infantry* (Oct-Nov 1960), "In limited war, we must be prepared to fight anywhere at any time. Clearly then, combat readiness is our biggest problem." With the readiness problem in mind, ask yourself if your unit could use an inland waterway. It's there, ready to use, but can be used effectively only by those who trains for such an opportunity.

Lt Hutchison, a 1956 USMA graduate, held assignments in Germany before serving as instructor, Ranger Department, USAIS, at the Florida Ranger Camp, Eglin Air Force Base. A graduate of the Airborne and Ranger Courses, he is presently on orders to attend the IOCC.

This article is in consonance with current doctrine as taught at the United States Army Infantry School. —Editor.

Get the Most
From Your AN/PRC 10

1st Lt William A. Hamilton, Inf

This article was sent to the Communications Department, USAIS, for comment. As footnotes we show that Department's specific comments, thus permitting the reader to decide for himself. Editor.

HAVE you ever found just the right spot for your CP, and then discovered you did not have good radio communications from that position? Locating a CP in defilade has many advantages, but ease of communication is not one of them. Since our FM radios work best on a line-of-sight basis, we lose much of their power in defilade positions The difficulty can be overcome, in some instances, by placing the antenna on high ground and wiring it to the radio set located in the defilade position.

This can be done in the following manner:

1. Select a position from which you can communicate with the stations desired. This is where you will mount a fishing pole type antenna.[1]

2. Cut a length of communications wire sufficient to reach between the antenna position you have selected and the position where you desire to place your radio.[2] Be sure to leave some slack.

3. Separate the pair of wires as you will need only one of the wires.

4. Save the remaining half of the wire for future use.

5. Strip approximately four inches of covering from each end of the wire.

6. Wrap one of the stripped ends around the threads on the bottom of the antenna.

7. Overwrap the wire-wrapped threads with friction tape.

8. Position the antenna and secure it in an upright position.

9. Lay the wire to the radio set, taking the usual precautions to insure protection from foot and vehicular traffic.

10. Coil or wad the remaining stripped end of the wire into a ball and stuff it into either the long or short antenna receptacle of the radio.

11. Wrap the receptacle with friction tape.

12. Operate the radio.

This system can be effective up to approximately 200 meters. For technical reasons, a certain length of wire may have an adverse effect on this antenna system. If you are not getting good results with the length of wire you first try, cut out a few feet, re-splice the wire, and try communicating again. It is unlikely that you will have the wrong length the second time. If you change frequency, it may be necessary to alter the length of the wire again.

If your vehicular radio is on the blink and you must rely on AN/PRC-10 for communication, connect it to one of your vehicular antennae. This should improve the range of your AN/PRC-10.

If your supply of BA-279 batteries is low and no re-supply is in sight, heat your old batteries over a space heater or a field range. This will re-juvenate them and give them a short second life. Don't over do it; just get them warm clear through.[3]

Comments from USAIS . . .

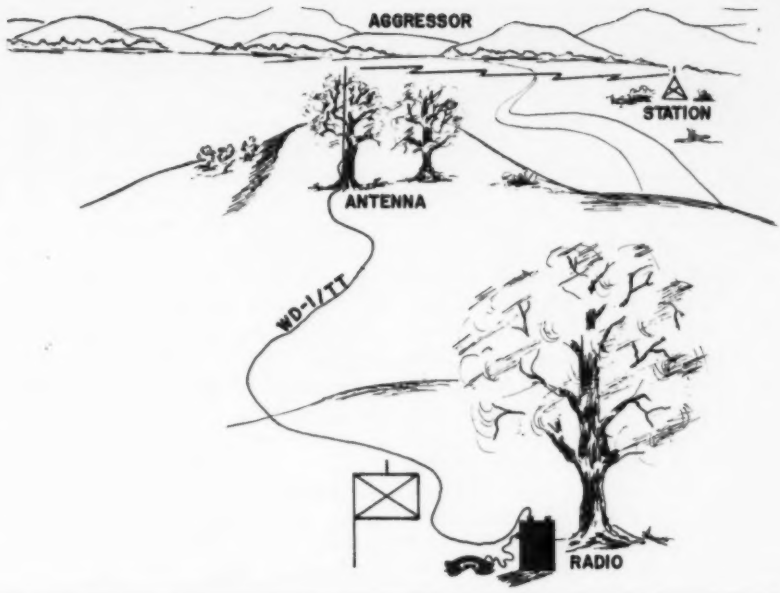
1. The type antenna described here is, according to current publications, of an unstable design. It may improve reception to a small degree, but in all probability it will not improve the range of the transmitter. It could even decrease transmitter range. The field expedient antenna outlined in Section IV, FM 24-18, in Chapter 3 and 4 of TM 11-666, and in paragraph 60 of the Communication Data Book are of "tried and proven" design and will give good results in the situation outlined by this author. Another item available at company level is the RC-292 Antenna. In the situation described by the author, Remote Control Group AN/GRA-6 could be used. Its installation time is less and the range is greater.

2. The field wire used here as a feeder or transmission line is not of a balanced type such as coaxial cable or 300-600 ohm balanced type feeders. The field wire itself would act as a radiator. See FM 24-18, para 84 and 85, July 1958.

3. The procedure outlined here is not advisable. Batteries heated above about 150 degrees may expand *and explode.* A "temperature charge" can be attempted by placing a battery on the radiator or head of a vehicle motor. *Never use a space heater or kitchen burner.*

If you would like to insulate the handles of your lineman's tools, talk the mess sergeant out of the rubber tubes which come on milk dispensers. Cut the tubes to the desired length and slip them over the handles of the tool. This also provides a non-slip grip. The light color of the rubber tubing makes the tool easier to find when dropped in the dark.[4]

4. This is correct as stated. However, insulating tool handles may give users a false sense of security and safety. *Live circuits should never be tampered with.* If tools must be insulated, use rubber or friction tape of a *known* breakdown voltage.



Feathers Aren't Birds

Capt Frank J. Simmons, Inf

HOBOKEN, New Jersey, was a beehive of activity that fateful summer of 1918. For more than a year it had been the principal embarkation point for hundreds of thousands of American troops embarking for France and the great war raging there. Division after division of American soldiers, clad in the choker-collared, dull OD uniforms of the period, had been funneled through the port, had anonymously climbed hundreds of gangplanks into dozens of ships, and had sailed through the Narrows and over the horizon to join the featureless ranks of fighting men in the trenches and mud of Flanders.

Then suddenly, amidst this monochromatic mass, a splash of color appeared. The Eighty-First Infantry Division arrived from Camp Jackson, South Carolina, with all of its members wearing upon their left shoulders a red-rimmed circular cloth patch of olive drab upon which was appliqued the red silhouette of a wildcat. Answering the questions of the curious, the men of the Eighty-First patiently explained that back at Camp Jackson, there was a stream named Wildcat Creek, that the Division had adopted for itself the nickname of "The Wildcat Division," that the patch was emblematic of the nickname and that it was damn well going to remain in place — which, as a matter of fact, it did.

Arriving in France, the men of the Eighty-First still proudly flaunted their patches, and again they found themselves besieged by the curious; this time, however, the curious ranged up through General Headquarters level. After much controversy on the legality of such unit self-distinction, a decision was finally reached. Someone high on the Staff — rumor had it that it was General Pershing himself — stated that a division with such morale and temper was more worthy of emulation than censure. The Eighty-First could keep its Wildcat Patch, and furthermore, each division of the AEF would devise, procure and issue its own distinctive shoulder insignia.

It is doubtful if anyone then realized that the first crack had appeared in the dam; that the door was opening once again—the same door which had once admitted Zouave uniforms with their baggy red trousers and red fezzes, Hussar-type jackets for cavalrymen, and even German-style "Pickelhaube" helmets for Infantry of the line.

By 1919, the drab American uniform had been enlivened by a wide variety of addenda. Eighty-two various shoulder patches were being worn, as well as wound stripes in gold and overseas stripes in both gold and blue . . . color was definitely on the way back into favor.

The long period of peace following World War I was also a quiet period as far as uniform elaboration was concerned. A few changes took place, probably the most outstanding being the switch from the choker-collar blouse to the lapel style, and several improvements upon the color and texture

of uniform fabrics; but, on the whole, the color addicts remained quiescent.

Then came 1940, with its mobilization of the Reserves and National Guard. As division after division was activated, new patches appeared by the dozen, slowly at first, and then faster and faster. By 1945, there was a grand total of over two hundred and fifty sew-on devices adorning Army uniforms throughout the world, ranging in design from the revered, simple and dignified Big Red One of the First Infantry Division to the five-colored cartoonish two-gunned cowboy of the Forty-Ninth Anti-Aircraft Artillery, and distinguishing units from Army Group down to, and including, a Battalion Combat Team. In addition to these shoulder patches, there were qualification patches, golden "Hershey Bars" denoting overseas service, and the golden wreath of the Meritorious Unit, famous as the "fur-lined horse shoe."

To further complicate the scene, the Right Shoulder Patch concept was spawned. Under this plan, an individual who had served overseas in time of war with a patch-wearing unit (and the regulation was retroactive to World War I) was "authorized but not required" to wear that patch on his right shoulder forevermore. Initially, those individuals authorized more than one such patch could wear a second above their right cuff, but this scheme was short-lived. Perhaps someone, somewhere, felt that it was possible to overdo even a good thing?

Then came 1949 and the explosion. Blue scarves for Infantrymen, blue shoulder ropes, blue plastic poker-chip-like discs set behind collar and cap devices became the order of the day. The long suffering soldier was festooned with meaningless trappings, designed to bolster his morale, improve his ego, and instill pride within him. No one seemed to realize that *esprit de corps* is not an issue item, and that morale does not lurk in supply room bins. Our present-day soldier, his class A uniform dripping with the geegaws of a high school ROTC unit, actually appears as a subject of ridicule to many members of other armed services.

This trend was offensive enough when confined to the dress or parade uniform, but when extended to the field or work uniform the results have proven to be sheer horror. To take a fatigue uniform, order men to have cuffs and epaulettes added to it, and then to adorn it with every item worn on the dress uniform (except hash marks and overseas bars) so that it, in effect, becomes a second-string dress uniform, almost defies comprehension. The field uniform is to be worn in combat; its color is such that it provides a measure of camouflage. Yet we see it today, so covered with white name tags, blue and gold "US Army" plates, gold-on-green chevrons, brightly colored patches, and even unit crests on the epaulettes, that the wearer couldn't blend with protective foliage if he tried. Atop this riot of color, we have one of two pieces of head gear—either the steel helmet (usually with a faded, almost white burlap sand bag closely fitted as "camouflage") or the spring-up cap. This latter item is undoubtedly the most uncomfortable and impractical field cap ever thrust upon the American soldier. It must be purchased at the PX; when washed it shrinks; it cannot be crushed or packed; and its principal claim to fame is that it is the favorite head gear of Central American and Caribbean revolutionaries.

To be honest about it, we have, within the past few years, developed what is undoubtedly the most impractical set of uniforms issued to US troops in decades. We have field uniforms that are impractical for the field and impossible for combat; we have a dress uniform that is bedecked with yard upon yard of vari-colored rayon which is supposedly indicative of intense pride, but which, in practice, makes a mockery of the word "uniform." Our division parades of today present an appearance that is the most un-uniform sight that can be imagined, what with scarves being worn of virtually every color that the magic of chemistry can impart to rayon, as well as three styles of chevrons (one NCO and two sizes of specialists) being displayed throughout the ranks.

When will we see the light and abandon this comic opera trend? In the past we have put fine fighting men in the field, and if need be, we can do it again. World Wars I and II, and Korea, clearly showed that good Infantry soldiers don't have to be dressed like characters from a Gilbert and Sullivan satire in order to function effectively. Why do we insist otherwise?

The opinions expressed in this article are those of the author and do not necessarily reflect thinking of DA or USAIS.—Editor.

The USARCARIB School

RECENT observers traveling to Latin America have been favorably impressed by the increasing professionalism in the military forces of the various nations there. It is difficult to pinpoint the reason, but the great progress made in *all* areas by most Latin American nations is no doubt largely responsible. One may also surmise, however, that at least part of the credit goes to the United States Army and its partnership with the other armies of the western hemisphere.

One of the major sources of the US Army's contact with the armies of the other American republics is the USARCARIB School, Canal Zone. Although the School began in 1949, its greatest successes have occurred since 1956, when the bold decision was made to eliminate instruction in English, and speak to the Latin Americans in their own tongue. During the years of progress since that time, more than ten thousand men from twenty-one different Latin American nations have graduated from the school. They have ranged in rank from Private to General, and have received instruction in such varied fields as armament, communications, military engineering, military intelligence, and tactics. The School has advanced from an institution devoted only to training technicians in basic military subjects to one which today teaches a wide variety of subjects from squad level to army level.

The official mission of the USARCARIB School is "to provide training for officers, cadets and enlisted men of the Latin American nations by offering in the Spanish language a wide variety of military courses designed to enhance their capabilities for performing duty in their respective fields, and to contribute to the development of mutual understanding and good will among the military establishments of the Latin American Republics and the United States." To carry out its mission, the School has much the same command structure as other US Army service schools. Its nucleus is its three instructional departments: the Automotive and Armament Department; the Technical Department; and the Tactical Department. An Infantry officer assigned to the USARCARIB School would be primarily interested in the Tactical Department, which provides the bulk of the Infantry instruction. The Infantry Section, one of five academic sections of the Tactical Department, offers four major courses, probably the most important being the Infantry Weapons and Tactics Course, equivalent to the IOOC presented at the Infantry School. It consists of a weapons phase of 11 weeks and a tactics phase of nine weeks. The tactics phase includes instruction concerning the squad, platoon, and company, and has a three-week period of field training emphasizing jungle warfare.

Other courses given entirely or in large part by the Infantry Section include a Cadet Course of

With guidance from U.S. instructors, students practice loading a light machinegun.

Latin American students practice firing the 57mm recoilless rifle.

46 weeks' duration designed exclusively for cadets who have completed four years of training at the military academies of their respective nations, and who will be commissioned upon completion of the cadet course. There is also a four-week Cadet Orientation Course similar to that given during the third year at the US Military Academy.

All personnel assigned to the USARCARIB School must be bilingual. Persons who receive an assignment to the school but who do not speak Spanish will be sent to the Army Language School for a six-month course designed to prepare them for the assignment. It should be added, too, that an effort is made to offer English instruction to the Latin American students at the school. The Army has established language laboratories, using the latest in electronic equipment, to teach conversational English. These have proved to be so popular that the facilities are now being expanded to meet the demand.

In addition to the bi-lingual US Army personnel, the staff and faculty includes a highly qualified group of Latin Americans who are outstanding graduates invited to return as Guest Instructors, usually for a period of one year. At present, there are instructors from Brazil, Chile, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, and Venezuela. The Guest Instructor program, together with our manifestation of interest in the Spanish language, has contributed immeasurably to a feeling of good will among all those associated with the school. Many lasting friendships have been formed, friendships which will, no doubt, help to promote international good will among the nations involved, and make the school's motto, *"Uno para todos y todos para uno,"** a political reality in the western hemisphere.

**One for all and all for one.*

MEET AN ROTC UNIT

Capt Roy J. Young, Inf

MAN is our ultimate weapon. Because of this, we must take every effort to insure that the military education of his leaders is conducted in a professional manner. The ROTC graduates from over 234 American universities and colleges will meet the Army's rigid standards if they have the proper guidance. This command guidance, and the personnel who execute it, will determine whether the ROTC second lieutenant is a "variable" or a consistently outstanding product.

There are many obstacles and problems which confront an ROTC program. A look at some of these problem areas and how they were solved by one unit might yield valuable insights into an assignment which many Infantrymen will experience during their careers, and might shed new light on how to improve the product of the ROTC Program.

The first step this exemplary unit took was to properly motivate the young college man through the "Old Spirit of Competition." The first two years are really the important ones in gaining a foundation of responsibility and devotion to duty. Attitudes learned then become part of a cadet's personality. These attitudes will either assist or deter him in his quest to receive a commission in the Reserve or to become a Distinguished Military Graduate and a Regular Army Officer.

Thus, in the first two years, emphasis was placed on academic grades, not only military, but in all subjects taken. Each commissioned assistant PMS had a number of students whom he counseled. The cadets came individually and in groups to discuss their problems, grades, and personal successes and shortcomings. This personal touch led to a better individual and group

effort on the part of the students. This counseling program was used to place a student on the right track when he strayed. Each counseling session was recorded in the cadet's personal file and kept as up-to-date as any 201 file. These files were maintained by a faculty advisor throughout the cadet's college career.

It was also found to be advantageous to familiarize the parents with the program and they were always invited to visit with the military faculty. These visits, educational for both the parent and the officer, created a feeling of cooperation and mutual interest.

In another change, the military faculty took an active role in all campus activities by serving as advisors for social and professional fraternities, academic and honorary organizations, and religious groups. For many years only the nonmilitary staff had served in these capacities. Members of the military staff were frequently called upon to serve as chairmen or members of university committees, indicative of the high esteem that the faculty held for the military program.

The military academic program was, of course, quite an important feature of the department. The instructors looked for new and interesting ways to teach. An example of the problems encountered is found is the presentation of a tactical exercise, Rifle Company in the Attack, a very difficult subject to teach without benefit of actual maneuver on the ground. The classroom was arranged around an elevated terrain board. In addition this piece of terrain was flashed on the vu-graph screen. As the cadets were gathered around these training aids, a tape recording of the voice of the battle group commander was heard issuing the BG attack order. During this phase each student was supplied with an outline of the operations order which he filled in as he received the order. Because of the training aids available to him, he was able to make an actual terrain analysis from the terrain board and a map reconnaissance from the vu-graph screen. After a suitable time, a student was called upon to issue a portion of his order. Then, a completed order was issued by a student as a company commander would normally do. The instructor guided the students into a suitable solution with emphasis on the execution. How successful was this method of instruction? From all reports at summer camp, these cadets were better qualified in tactics than their contemporaries from the other universities.

Examinations were very important to the students and the instructors. Emphasis was not placed entirely on multiple choice or fill-in-the-blank type of measurement. Essay examinations were found to be the most valid. From these the instructor got an insight into the student's ability to analyze, organize and write, in addition to his knowledge of the specific subjects.

The importance of the oral examination was not overlooked either. In this type of measuring, students were called upon in class to recite, and were given a grade not only for the accuracy of the answer, but for their manner of responding, their appearance, and their ability to organize and communicate. The well-rounded citizen-soldier must be able to communicate, think on his feet, and express himself before others.

A young college student who meets the standards of the university for graduation might not meet the standards for a Reserve commission. In order to eliminate the weaker individuals, a board of officers from the Advanced Section met periodically with a civilian representative of the student's college, either the dean or his assistant, as a voting member. The cadet who lacked the necessary requirements, academic or leadership, was notified in writing to appear before this board. The board had the authority from the PMS either to retain the cadet, retain him under probation, or eliminate him from the program. A number of juniors and seniors were eliminated in this manner, in each case with the concurrence of the dean or his representative. All students who came before the board were permitted to offer any information and explanation for their deficiencies. The board also assisted those who required special guidance. The elimination of students had quite a resounding effect on the entire cadet corps. The corps now realized one great feature: you do not automatically receive a commission from the Army merely because you have received a degree from the university.

The rigid academic program proved to be quite rewarding for the conscientious cadets. As further incentive, awards were given for academic and leadership achievements at a formal parade with full coverage by the press. Throughout the entire program, every effort was made to imbue the cadet with the importance of the "Duty, Honor, Country" code. An ROTC instructor is charged with the responsibility of giving this young man the proper guidance, courage, initiative, sincerity, and understanding that will enable him to become an officer with a high sense of honor, a deep devotion to his duty, and a sense of responsibility. An instructor cannot do this alone. He needs the cooperation of the university faculty and the confidence and respect of the civilian community—all of which he has to earn.

CAPT YOUNG received his ROTC commission (DMG) at Louisiana State University in 1953. He has served as instructor and company commander at posts in Texas and Alaska, and in 1957 returned to LSU as assistant PMS. He is now Commanding Officer, Co A, 2d Battle Group, 1st Infantry.

WHAT'S NEW FOR INFANTRYMEN

ROCKET GRENADE

The Army's new antitank rocket grenade, the XM 72, is fired from its own disposable packing container. Highly effective against tanks, earth-fitted log emplacements and sandbag fortifications, the light weight XM 72 can be carried and fired by one man. Small, light and simple to operate, the grenade is readily adaptable to mass production. It can be fired from a standing, kneeling or prone position. In the photo above, the components of the XM 72 from top to bottom are: rocket grenade, carrying case-launcher, and canvas carrying sling. In the photo below preparations are made to fire the XM 72 from the kneeling position.

MULTI-PURPOSE TRACTOR

A multi-purpose crawler tractor that is both air-droppable and amphibious is currently being tested by the U. S. Army Engineer Research and Development Laboratories, Fort Belvoir, Virginia. Called the "Universal Engineer Tractor" (UET), it has the capabilities of a scraper, a grader, a cargo carrier, a dump truck, and a high speed prime mover.

Although it is light enough to meet airborne requirements, the UET is able to perform the work of heavy earthmoving equipment by means of an unique self-loading ballast bowl or compartment.

The UET is powered by a 250 hp, V8, liquid cooled, gasoline engine located at the rear of the vehicle. Controls also are located in the rear to give the operator an unobstructed forward view of the bowl during the scraper-loading operations.

Another unique feature is a hydro-pneumatic suspension system controlled by the operator. In a solid or unsprung state, the suspension system permits the machine to perform earth-moving and other such functions, but in a sprung state the UET can run smoothly on and off the highway at convoy speeds. The crawler tracks will propel it across rivers and lakes at a speed of four miles an hour.

FIRST AID KIT

A new first aid kit is being tested for possible use by the Army. Balancing the need for more medical items against weight and size, the kit measures 8x2x4 inches, weighs about one pound, and can be attached to a standard pistol belt.

The kit contains two inner packets, one to be used by the individual himself, while the other can be used to take care of a fellow soldier.

The packet designed for use by the individual

himself contains a first aid dressing, adhesive bandage, and iodine water purification tablets.

The second packet can be used by the individual himself or on a fellow soldier. It contains dry electrolyte salts (sodium bicarbonate), to be taken by mouth in care of burns, an absorbent adhesive bandage, individual first aid dressing, muslin bandage, and more water purification tablets.

Both packets were designed so that an injured person can open them quickly and easily even when wearing gloves. In addition, they are water- and weather-proofed.

IMPROVED SEARCHLIGHT

A new military searchlight developed by US Army Engineers is one-half the size of the current model but has twice its range and intensity. Trailer-mounted, the new 30-inch, general-purpose light will replace the present standard 60-inch, truck mounted unit, and will produce 450 million peak beam candlepower. It can be operated from the trailer or readily unloaded by two men and operated from the ground. The searchlight is towed by a jeep.

ALUMINUM WATER TANK

An all-aluminum water tank, semi-trailer mounted, possessing several highly desirable features not found in the steel water tank trailer which it replaces, has been developed by the U. S. Army Engineer Research and Development Laboratories, Fort Belvoir, Virginia.

The new tank trailer is unique in that it is not mounted on a frame, although it has an overall length of approximately 248 inches and weighs 6,425 pounds. The use of aluminum also gives it a greater payload to weight ratio over the steel tank, having 2,000 gallon capacity, compared to 1,500 gallon for the steel tank.

In addition, the aluminum tank does not require a protective interior lining or coating as does the steel tank. The aluminum tank is insulated and has a heating system, making it more suitable for desert and arctic operations.

SUBSCRIPTION FORM

BUSINESS OFFICE, INFANTRY MAGAZINE
EPO, USAIS FORT BENNING, GEORGIA

INFANTRY

PLEASE CHECK APPLICABLE BOXES:

- ☐ $10.00 3 YEARS
- ☐ $ 7.00 2 YEARS
- ☐ $ 4.00 1 YEAR
- ☐ REMITTANCE HEREWITH
- ☐ BILL ME
- ☐ NEW
- ☐ RENEWAL
- ☐ CHANGE OF ADDRESS

FOR FOREIGN POSTAGE (NON-APO) ADD 60¢ PER YEAR

- ☐ ACTIVE ARMY
- ☐ USAR
- ☐ NG
- ☐ USMC
- ☐ USMA ROTC OCS
- ☐ OTHER

SEND INFANTRY MAGAZINE TO THIS ADDRESS: (Please Print)

Rank Name Service No.

Unit or Street Address Arm/Branch

APO or City State or Country

IF ON ACTIVE DUTY PLEASE GIVE US A TRACER ADDRESS HERE

(Name of person who can always furnish your current address)

Street Address

APO or City State or Country

IMPORTANT: For Better Service Fill Out Completely

These Space for Office Use Only

BR	
COMP	
TYPE	
EXP	
ENT	
SRC	
AGEN	
LOC	
SUBS	

MONTHLY LIST OF INSTRUCTIONAL MATERIAL

The Monthly List, reproduced here as a reader service, is an official publication of the Infantry School, and is produced to facilitate coordination of Infantry doctrine among Army service schools and to offer Infantry School instructional materials to Army agencies which conduct, support or monitor school-type instruction. It is distributed under provisions of USCONARC Regulation No. 310-2, 30 August 1960. Each authorized addressee is furnished one gratuitous copy of any listed item specifically requested for official use.

Items preceded by asterisks may be purchased from the Book Department, USAIS, Ft. Benning, Ga., at prices indicated, by any member of the U. S. Armed Forces who so identifies himself when ordering. Requests must include name and address of the military unit to which assigned or attached, and a statement that the material will not be re-sold or otherwise released to individuals not assigned to the military establishment or to agencies not an integral part of the military establishment. Mail orders must be accompanied by full remittance, including postage surcharge. Orders will be mailed to the requester through his unit.

Items without asterisks are produced for resident instruction at the Infantry School and are not available for purchase. However, a unit or agency having a strong official need for any item may request a gratuitious copy from the Editorial and Pictorial Office, USAIS, Ft. Benning, Ga. Requests must state the purpose for which the material is needed and must include the official title and unit or agency address of the requester. Properly justified requests will be filled as long as the supply lasts.

***Conduct of Fire, Infantry Mortars,** 1684-USAR(ADT). Reviews characteristics, capabilities, ammunition of 81mm and 4.2-inch mortars; acquaints students with new developments; reviews forward observation procedures employing target-grid method of fire control; a practical exercise applying forward observation procedure. 20¢

***Signal Operation Instructions,** 3309-USAR(ADT). Integrated conference, practical exercise covering contents and use of Signal Operation Instructions (SOI), Standing Signal Instructions (SSI).

Communication Security and Transmission Security, 3511-USAR(ADT). Integrated conference, demonstration outlining physical and transmission security measures as applied to radio communication; emphasis on radio transmission security.

***Battle Group Vehicular FM Ratio Sets,** 3560-USAR-(ADT). Integrated conference, demonstration covering operational facilities, characteristics, components, operation of radio set AN/GRC-7. Practical exercise in operation of various components of radio set AN/GRC-7, to include aspects of transmission security.

Introduction to Signal Communication, 3601-USAR-(ADT). Integrated conference, demonstration of means of communication, rules of responsibility for installation, maintenance of communication systems and tactical application of each means.

Graphic Representation, 6304-A4-USAR(ADT). Integrated conference, practical exercise emphasizing use of graphic representation and production of operating orders, situation maps, related overlays.

***Infantry Reference Data,** March 1961. $1.20

TRAINING FILMS

The following training films have been approved for release to requesting units:

R&D #2, United States Army Research and Development—Progress Report Number Two, 28 minutes.

GF 10-50, General Purpose Tents, 23 minutes.

MF 3-9286, Smoke and Flame in Warfare, 15 minutes.

MF 5-9285, Know Your Fire Hazards, 20 minutes.

SFS 38-66, Packaging and Packing—Fiberboard Boxes, 17 minutes, 56 frames.

SFS 38-67, Packaging and Packing — Preparation of Freight for Air Shipment, 14 minutes, 51 frames.

SFS 38-69, Miscellaneous Shipping Containers, 14 minutes, 48 frames.

SFS 38-70, Packaging and Packing—Economy in Packaging and Packing, 13 minutes, 52 frames.

SFS 38-72, Packaging and Packing—Waterproof Barriers and Their Uses, 14 minutes, 49 frames.

TF 3-2809, CBR Protective Shelters—Part I—Field Shelters, 14 minutes.

TF 3-2977, CBR Protective Shelters—Part II— Semi-Permanent and Permanent Shelters, 18 minutes.

TF 3-3036, CBR Permeable Protective Outfit—Part I—Donning Procedure, 8 minutes.

TF 3-3037, CBR Permeable Protective Outfit—Part II—Removal Procedure, 7 minutes.

TF 3-3038, CBR Impermeable Protective Outfit—Part I—Donning Procedure, 10 minutes.

TF 3-3039, CBR Impermeable Protective Outfit—Part II—Removal Procedure, 8 minutes.

TF 3-3055, CBR Duties of Sentinels, 18 minutes.

TF 5-2877, Camouflage—Part II, 27 minutes.

TF 6-3097, The Lacrosse Battalion Guidance Section—Part I—Duties in Preparation for March Order and Action, 25 minutes.

TF 7-3023, Combat Formations and Battle Drill, Rifle Squad, Part II—Battle Drill, 13 minutes.

TF 7-3024, Combat Formations and Battle Drill, Rifle Platoon—Part I—Combat Formations, 15 minutes.

TF 7-3025, Combat Formations and Battle Drill, Rifle Platoon—Part II—Battle Drill, 13 minutes.

TF 7-3040, Drop Zone, 24 minutes.

TF 8-3031, Medical Supply Service, US Army—Part I—Organization and Administration, 28 minutes.

TF 8-3032, Medical Supply Service, US Army—Part II—Operations at Class I, Class II, and Overseas Installations, 27 minutes.

TF 8-3056, The Army Health Nurse, 24 minutes.

TF 10-2965, Protective Gear for Handling Guided Missile Liquid Propellants, 22 minutes.

TF 10-3073, Care and Use of Pneumatic Dunnage, 15 minutes.

TF 10-3092, Individual Load Carrying Equipment, 20 minutes.

TF 11-2998, Manual Telephone Central Office AN/TTC-7, 21 minutes.

TF 11-3046, Transistors—Part I—Introduction, 17 minutes.

TF 15-2999, Investigation of a Claim, 35 minutes.

TF 16-3099, The Real Person, 10 minutes.

TF 17-2946, Tank Company Team in the Delaying Action, 25 minutes.

TF 17-2964, Tank Company Team as Part of a Mobile Defense in a Fixing Force Mission, 24 minutes.

TF 17-3014, Slaving Tactical Vehicles, 25 minutes.

TF 17-3016, Crew Drill and Service of the Piece, 4.2 Inch Mortar Squad (Armor), 29 minutes.

TF 17-3074, Crew Maintenance Services (Automotive) Medium Tank M48A2, 28 minutes.

TF 19-3013, Dividends of Discipline, 27 minutes.

TF 30-2989, Strategic Intelligence School, Area Film Studies, Number 7—South Asia, 35 minutes.

TF 44-3012, Nike-Hercules Missile—Part III—Missile Motor Installation, 28 minutes.

IDEAS WANTED: Does any reader have an idea as to how the current hand-and-arm signals can be simplified effectively to use only *one* hand or arm? If there is a good system, one which is not so involved that it is difficult to remember, then it would permit the leader or scout to keep his weapon where it belongs, or to use his radio while signaling.We offer as a suggestion the possibility of using combinations, such as two waves of the arm meaning something different from one identical wave of the arm. If you have an idea you'd like to try out, please send it, with sketches, to the Editor.

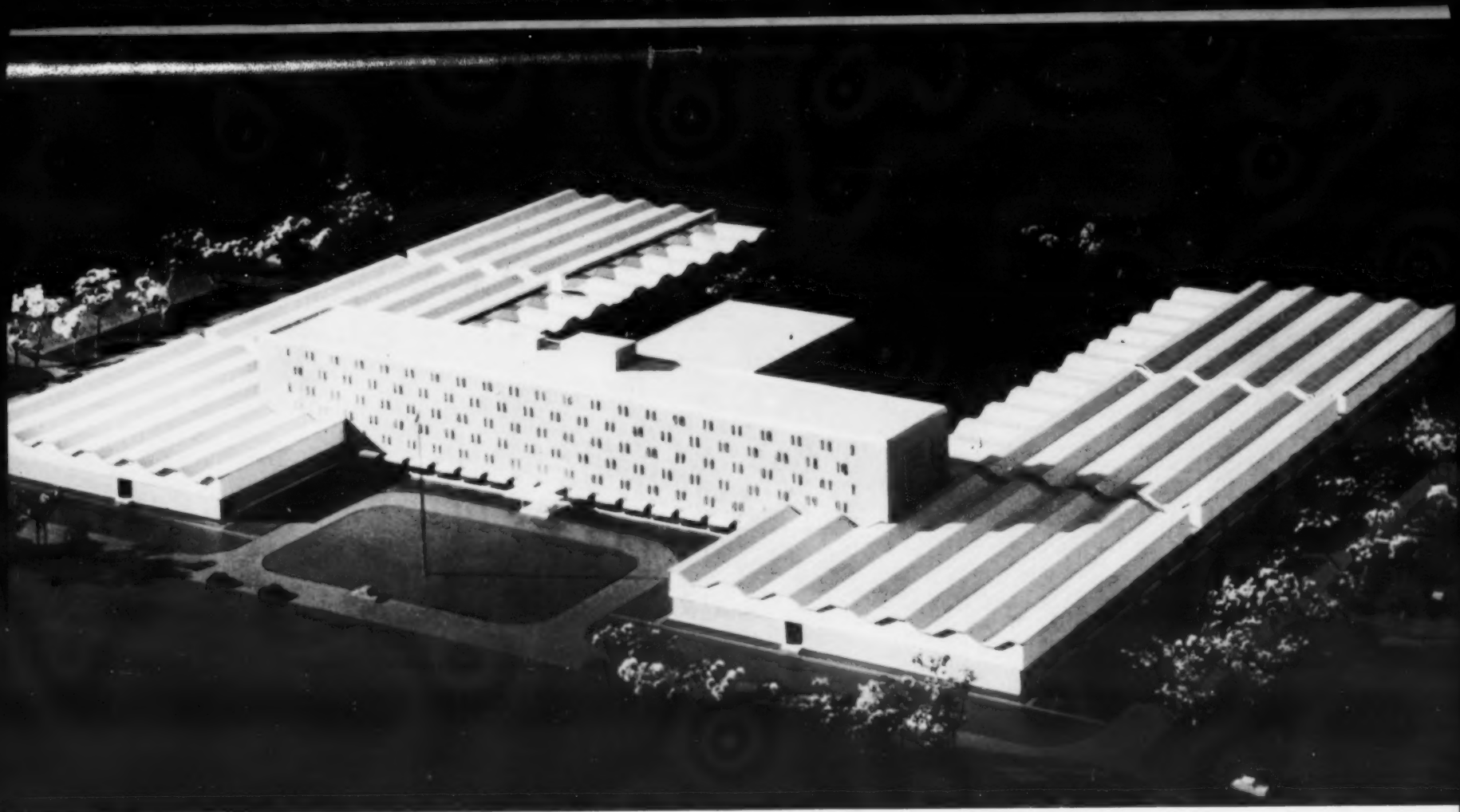
THE INFANTRY SCHOOL BOOK STORE

To purchase merchandise cited here, submit a signed request to the Book Store, United States Army Infantry School, Fort Benning, Ga. (See "Monthly List" for authorized patrons). To cover the cost of shipping, an additional five percent of the total amount of the merchandise ordered must be included on all orders. On orders of less than $5.00, a minimum charge of $.25 must be included.

ITEM	*PRICE*
Calendar base	$1.20
Calendar pad 1961	1.00
Metal filing cabinets 3″ x 5″	.40
Cards, filing, ruled 3″ x 5″	.15
Slide rule, 10″ with case	2.65
Ink, drawing, various colors	.30
Compact marking kit, (letters and numerals)	1.85
Pencil sharpener	3.50
Compass, lensatic	3.25
Plotting board, M-10, opaque plastic	2.25
Stencil set, paper	1.15
Colored pencil set (includes 24 different colors)	.50
Protractor, 8″, mils & degrees	.80
Scale, coordinate, metric 1:25,000, 1:50,000, 1:100,000	.75
Tabs, index, cloth, cut 5″	.20
Tabs, index, cloth, cut 8″ & 6″	.30

ITEM	*PRICE*
Tacks, map, various colors	.20
Needles, plotting	.20
Coordinate scale & protractor combination	.90
Polyangle ruling guide	1.80
Atomic damage template, 1:25,000	1.35
Push pins	.15
Stapler	5.00

SALES HAVE BEEN SUSPENDED of the Infantryman statuette. Because of difficulties which have been experienced with these statuettes, particularly in mailing, all sales have been discontinued pending efforts to procure a more stable model. All indications are that procurement of a stronger model will mean the use of metal, in which instance each statuette will necessarily retail for considerably more than the model heretofore stocked by the Book Store. When details are firm, announcement will be made in *Infantry*.



Artist's concept of the new academic building of the Infantry School.